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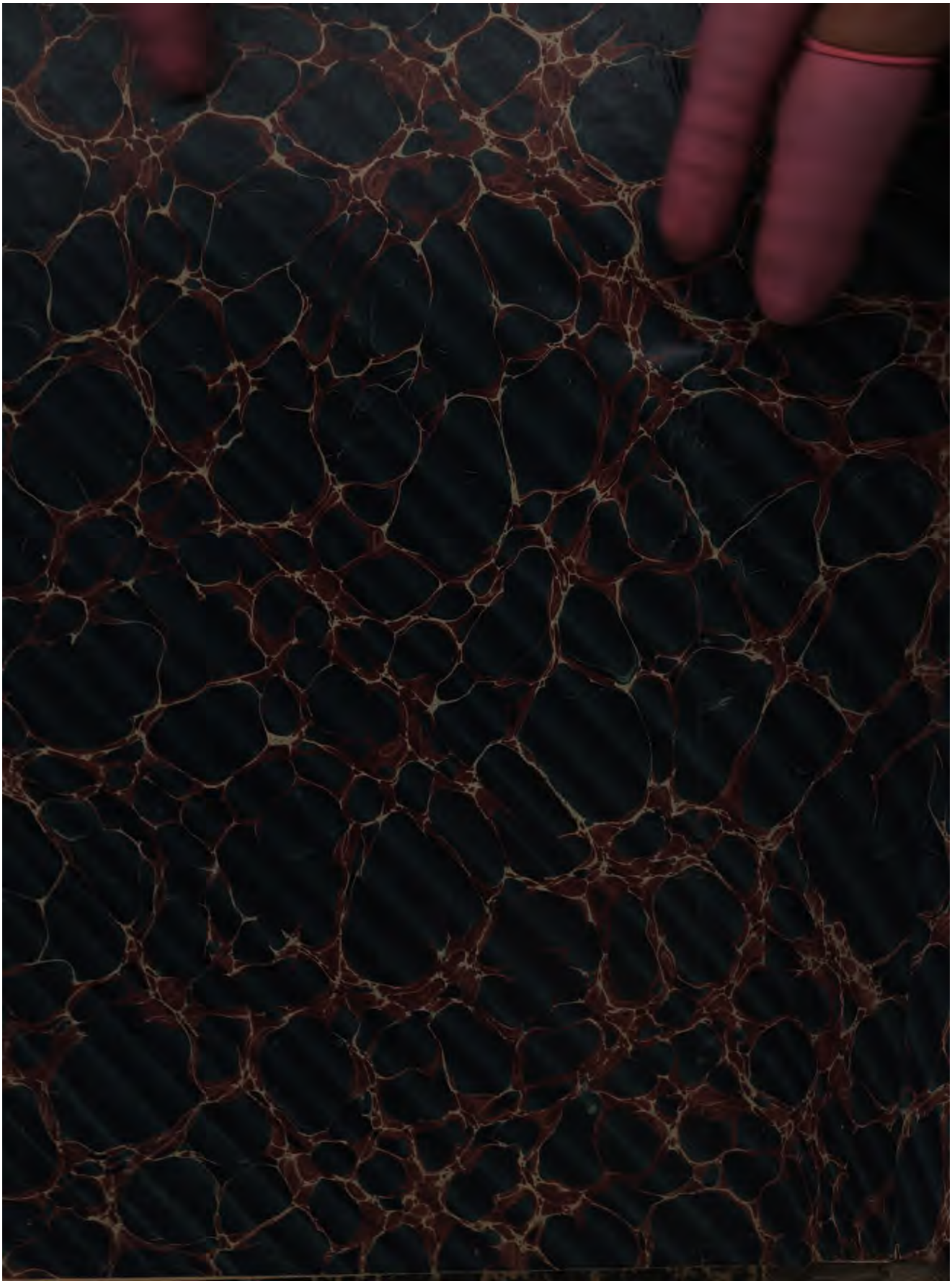

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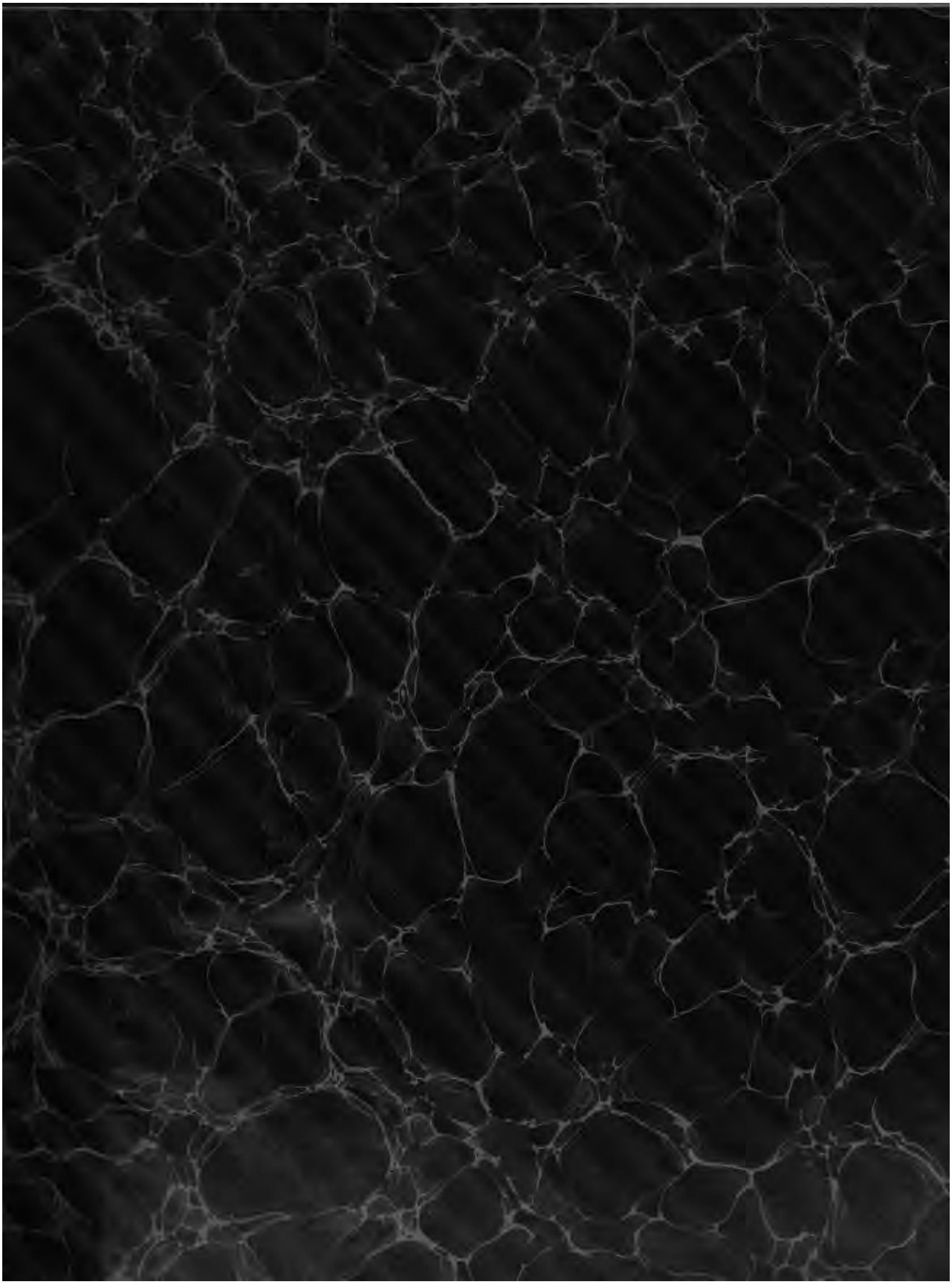

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GUSTAVE RICHARD

INGÉNIEUR CIVIL DES MINES

LA CHAUDIÈRE LOCOMOTIVE

ET

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PLANCHES

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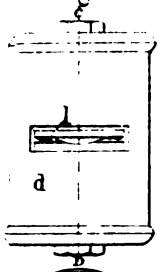

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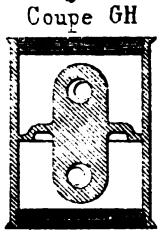

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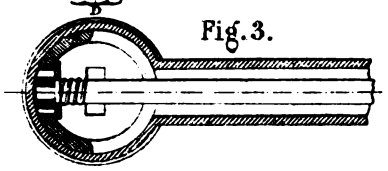

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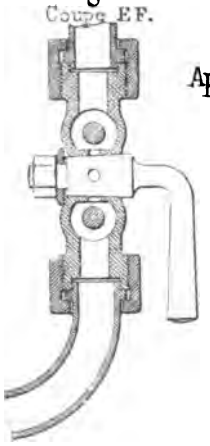

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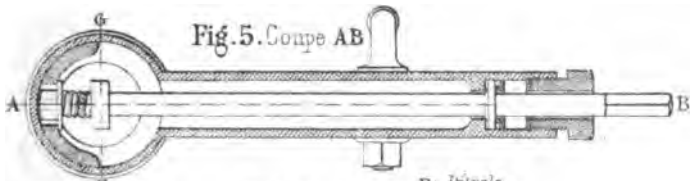

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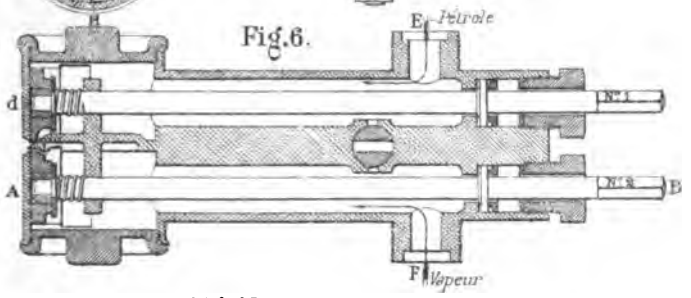

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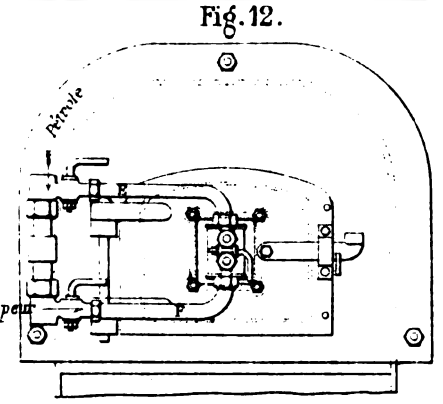

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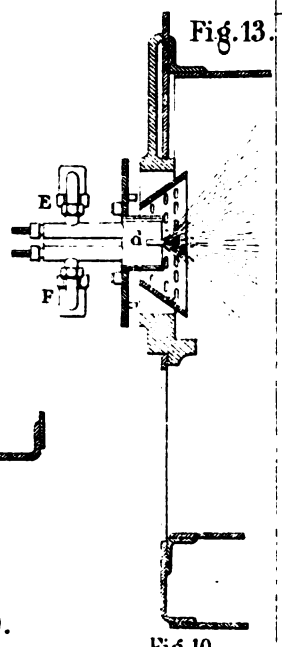

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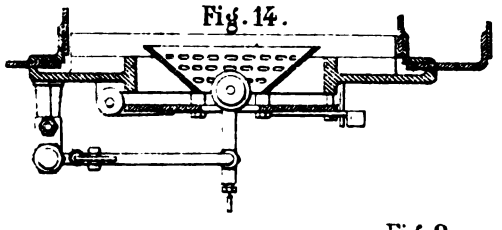

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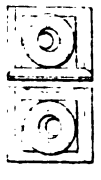

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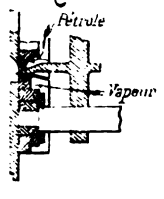

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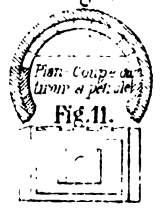

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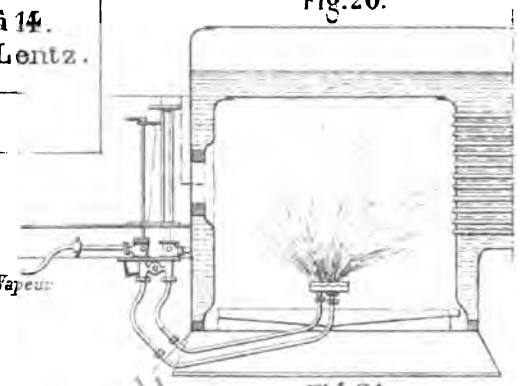

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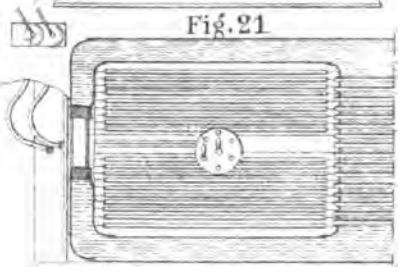

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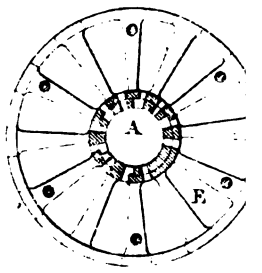

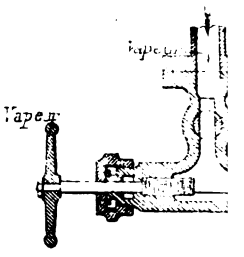

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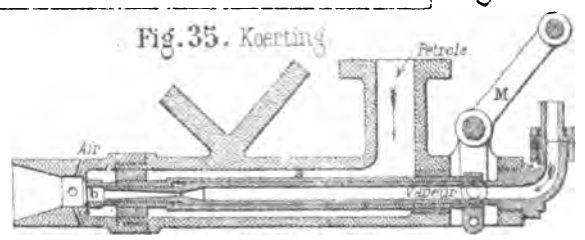

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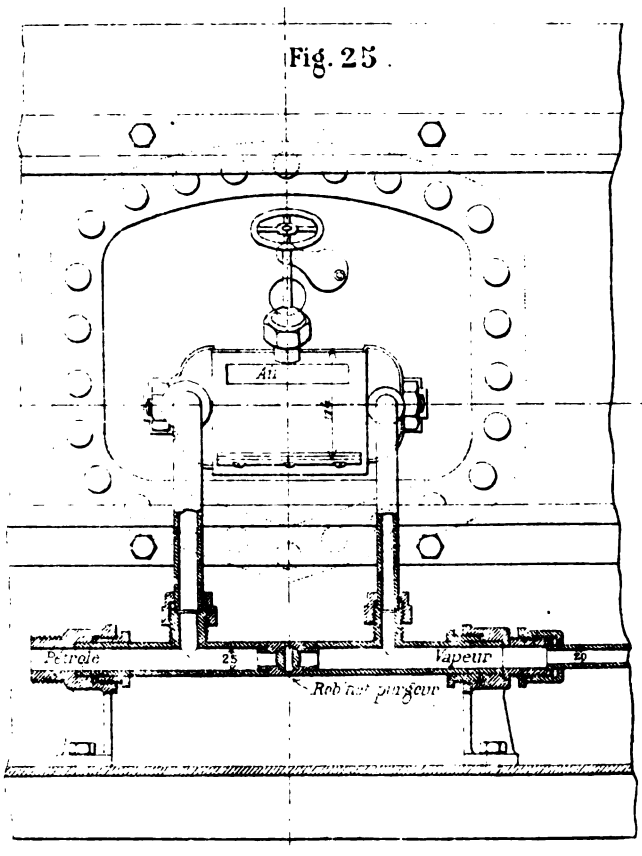

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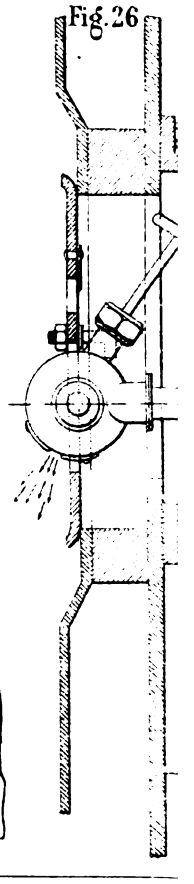

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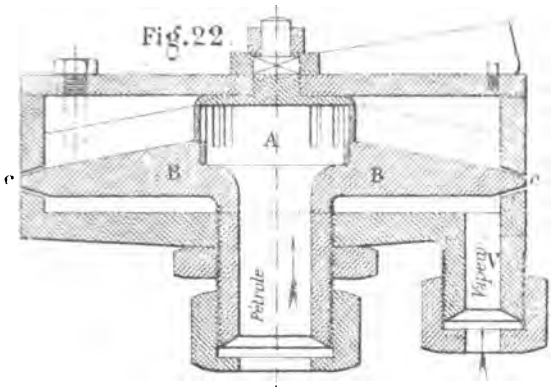

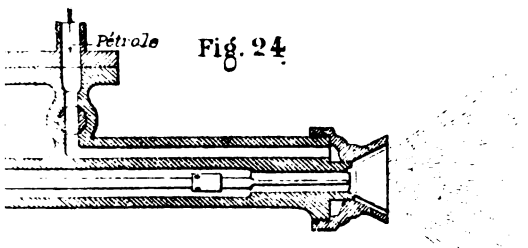

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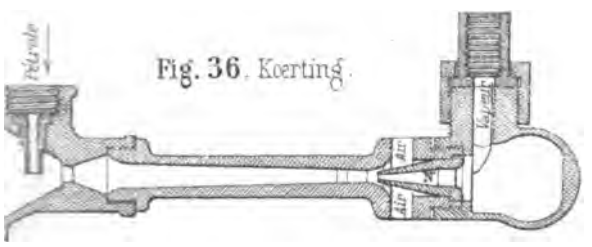

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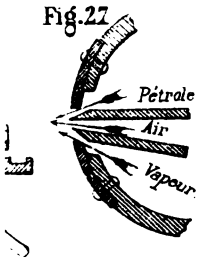

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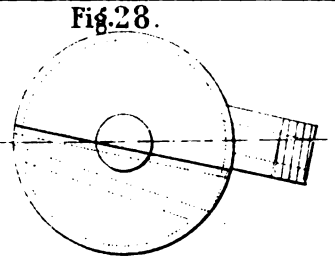

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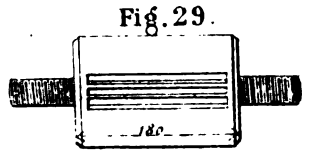

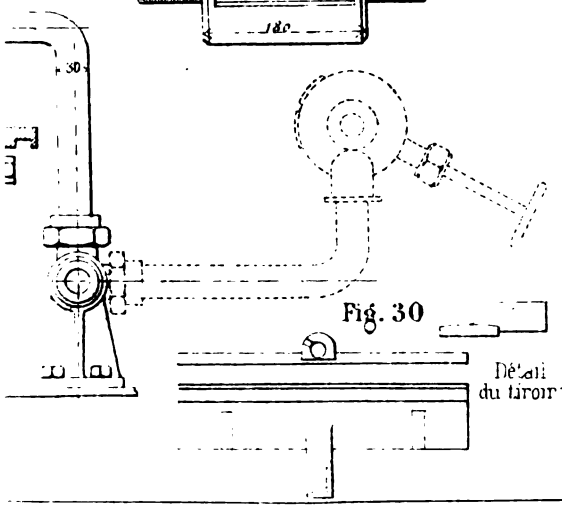

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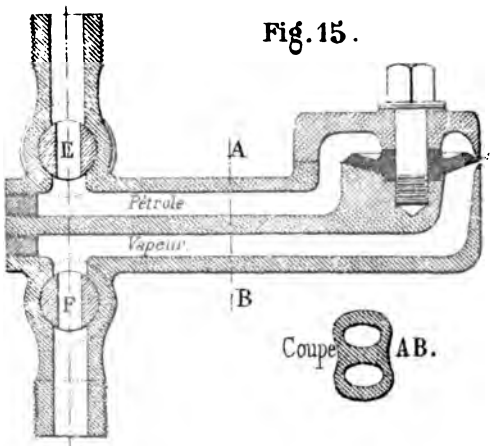

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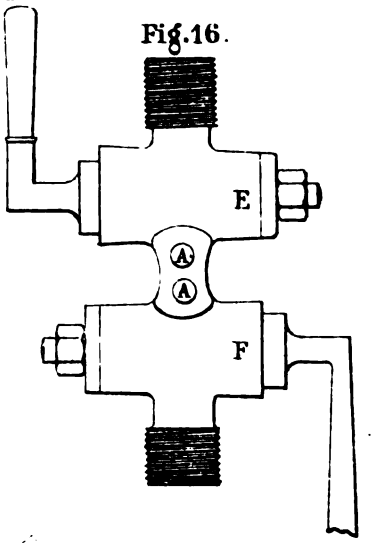

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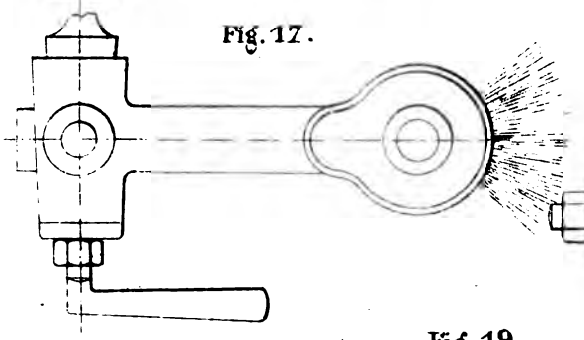

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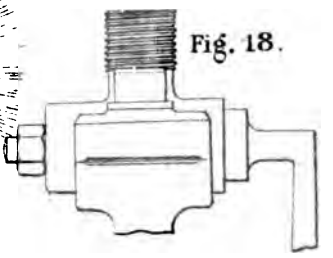


Fig.19.

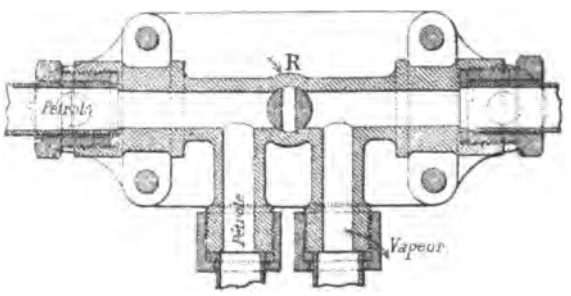
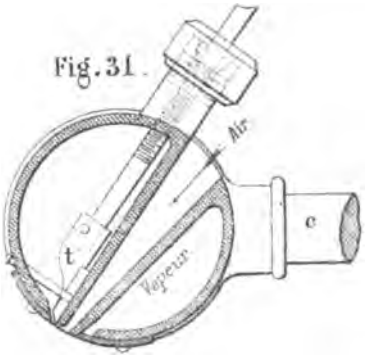


Fig.25 à 34: Appareil Karapétoff.

Fig.31.



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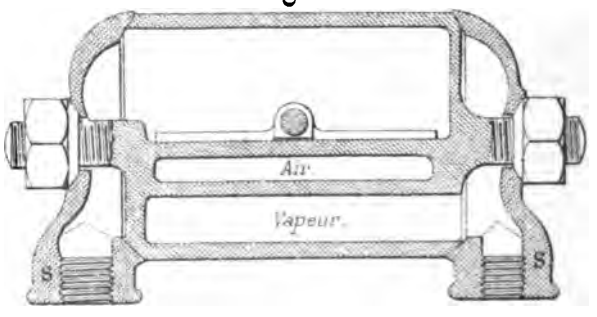

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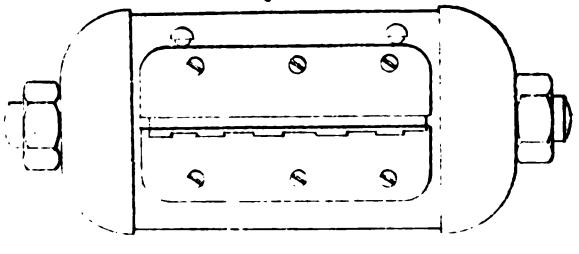

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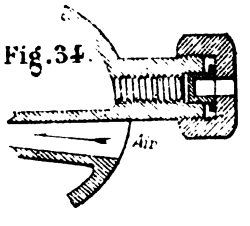

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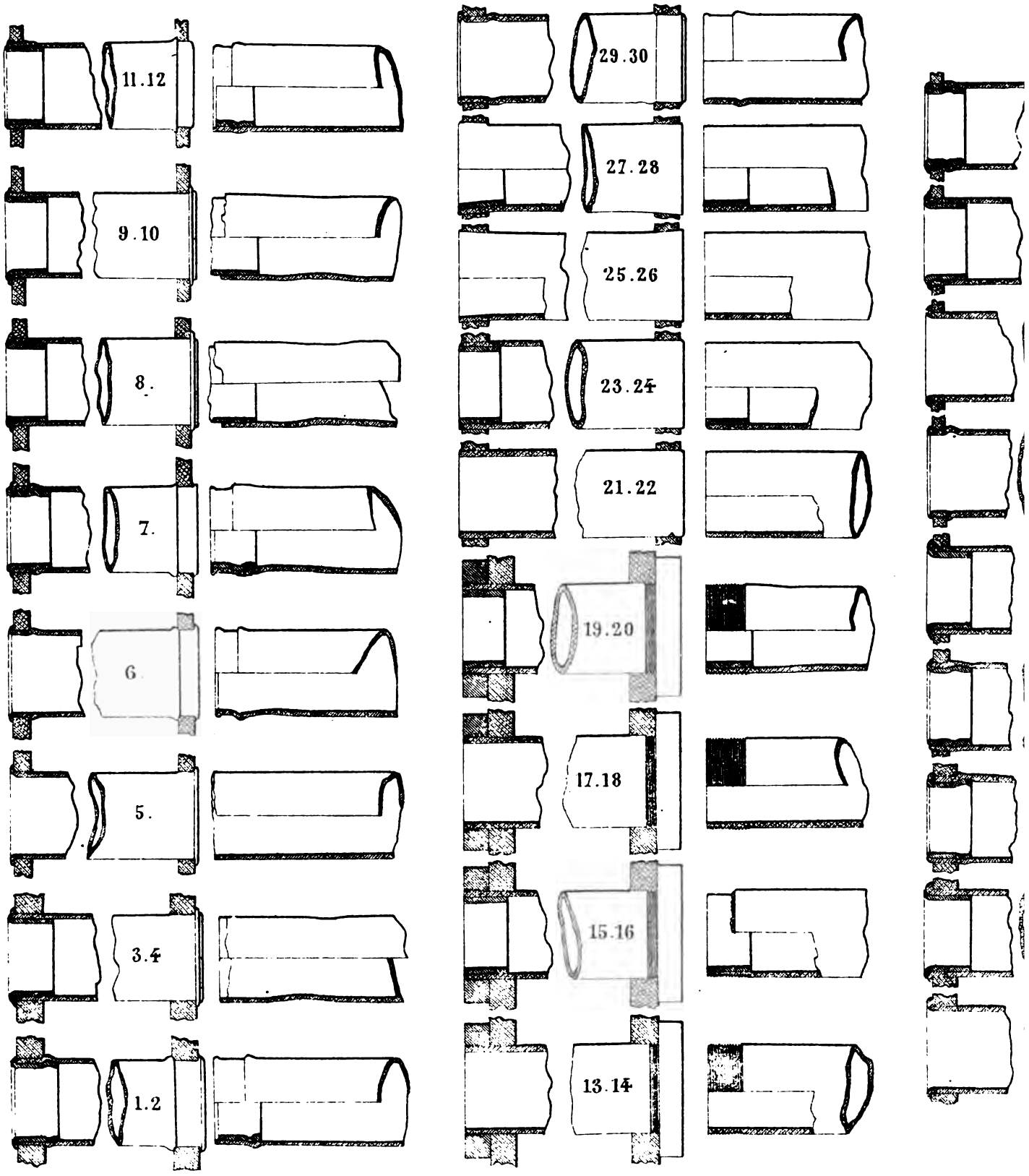
Expériences de M.W.H.Shock sur l'a

Première Série (Tubes en laiton.)



Adhérence des tubes aux plaques tubulaires.

Deuxième Série (Tubes en fer.)

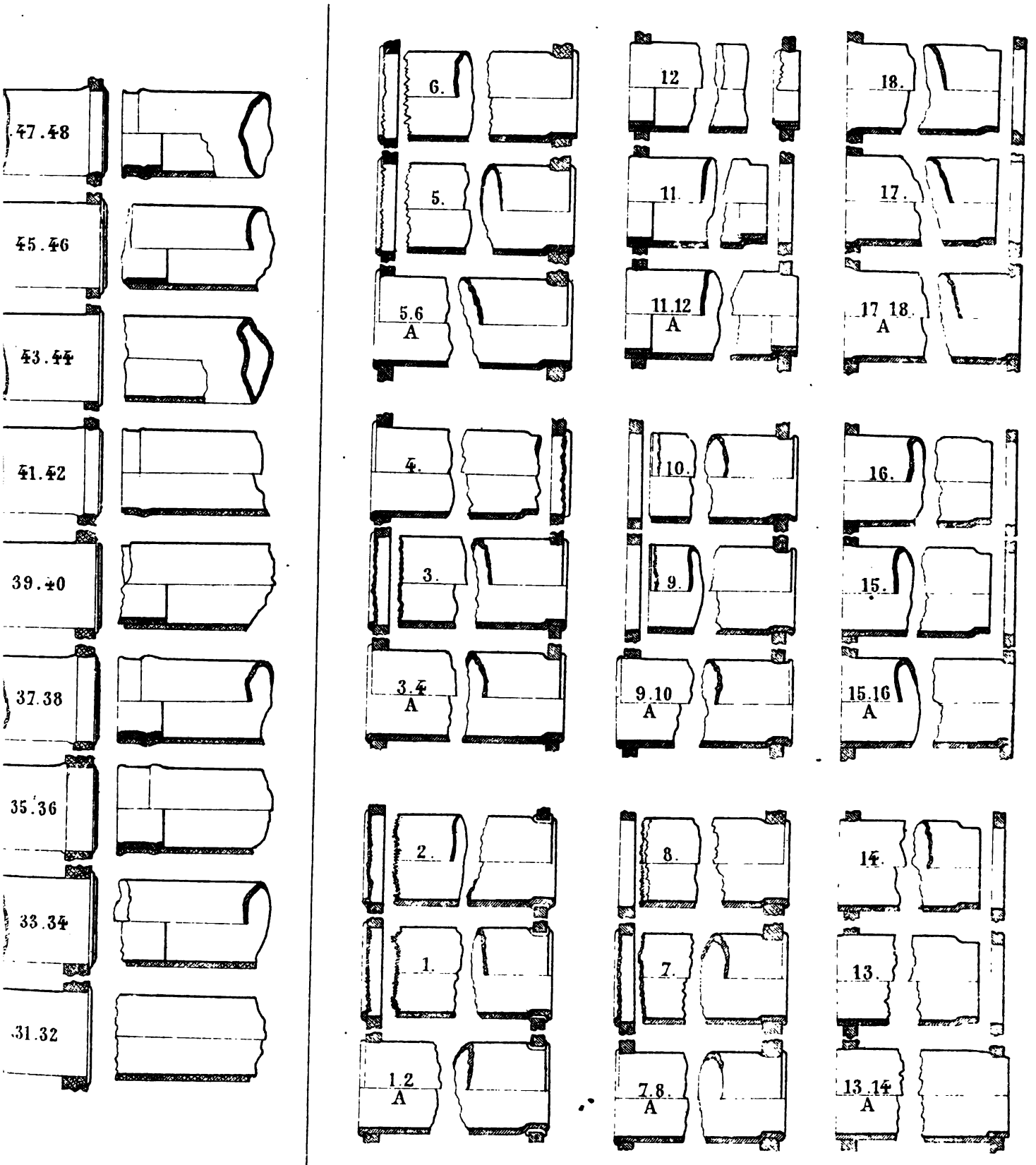


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Fig. 1.
Delpech.

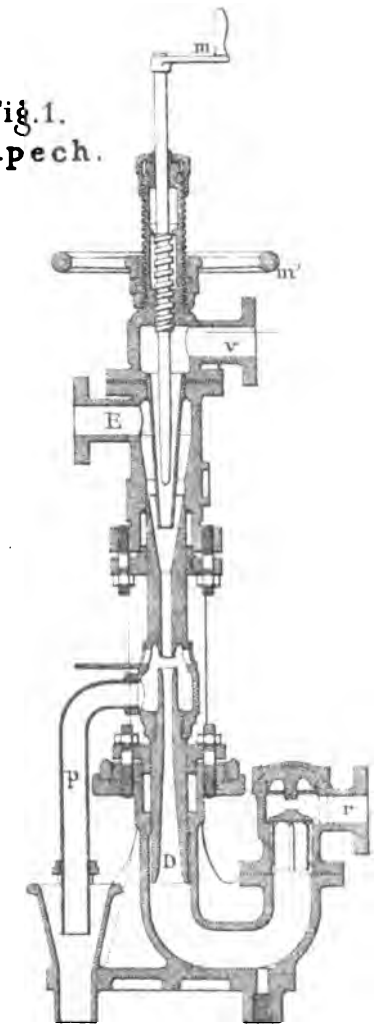


Fig. 2. **Scharp.**

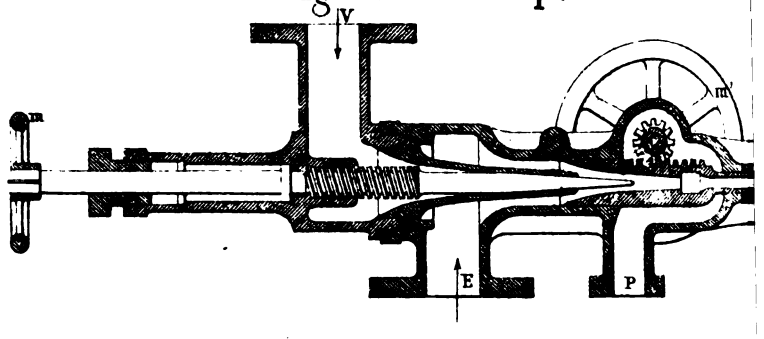


Fig. 3. **Cresham.**

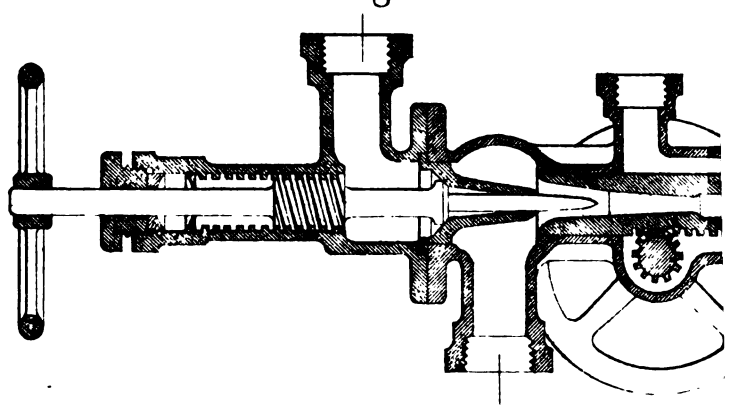


Fig. 9. Di

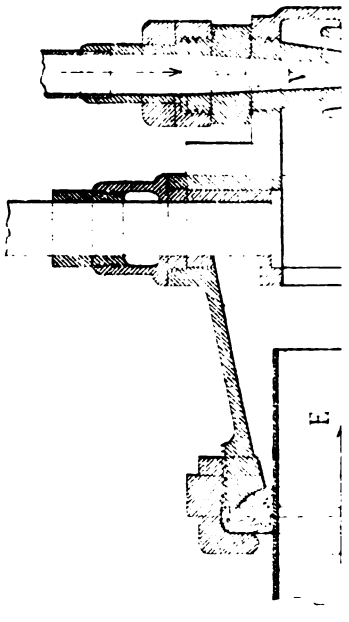


Fig. 6. 7 et 8.
Friedmann *(aspirant)*
Type D

Fig. 6. Coupe c d

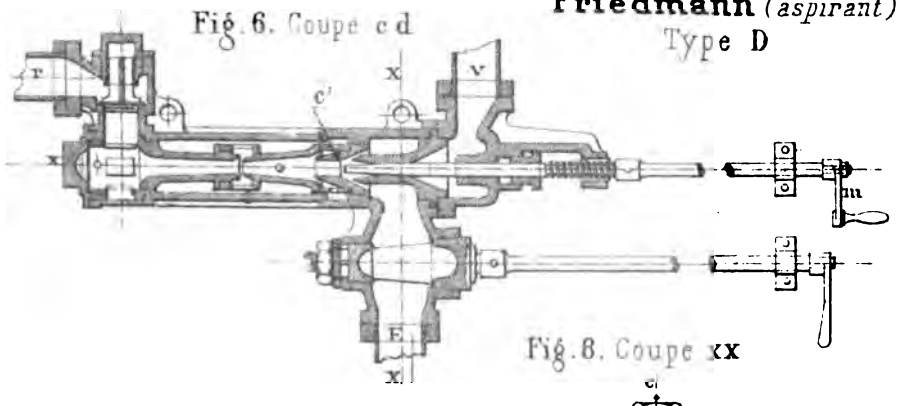


Fig. 8. Coupe xx

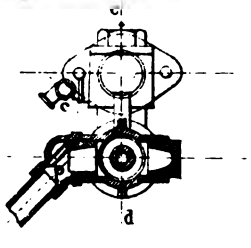
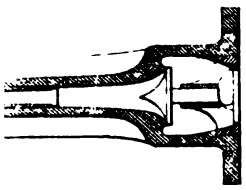


Fig. 7. Injecteur démonté

NJECTEURS



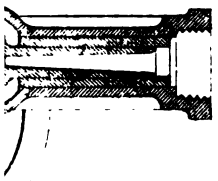
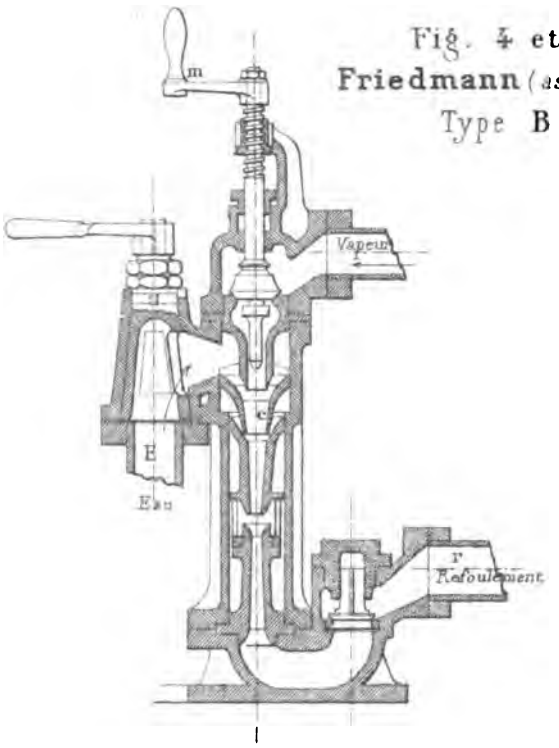
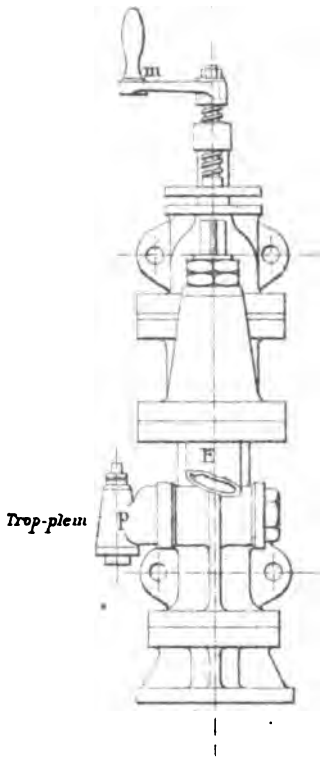


Fig. 4 et 5.
Friedmann (*aspirant*)
Type **B**.





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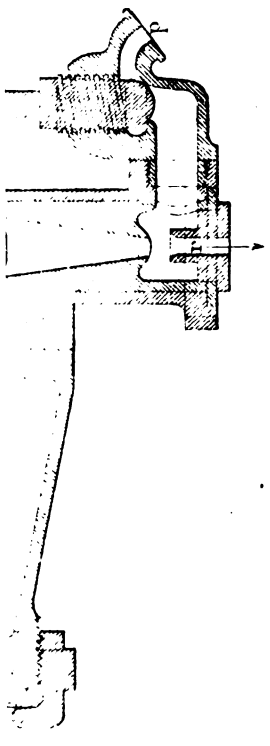

Fig.10. Loftus Kinnear

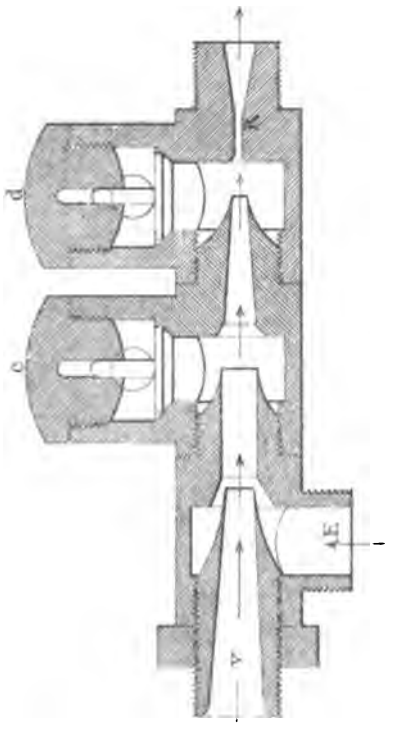

Fig. 11.
Hunt.

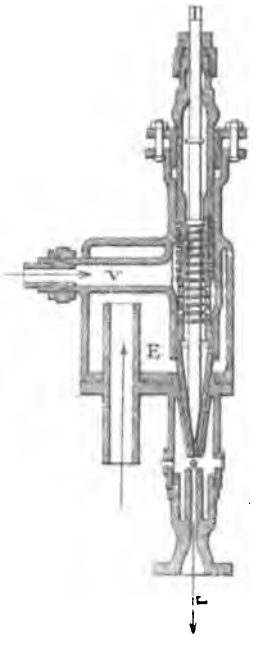

Fig. 12.
Turck

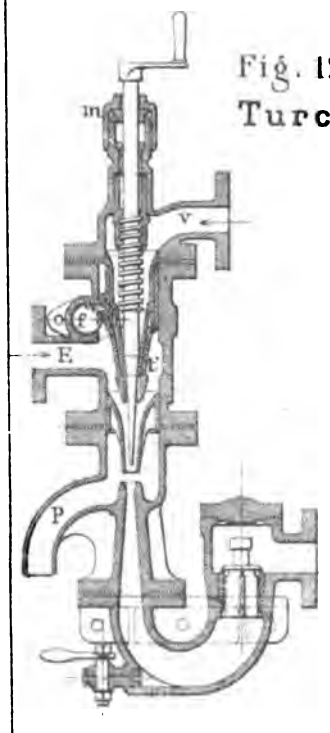

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Fig. 1
Scharp Stewart. (*aspirant automatique)*

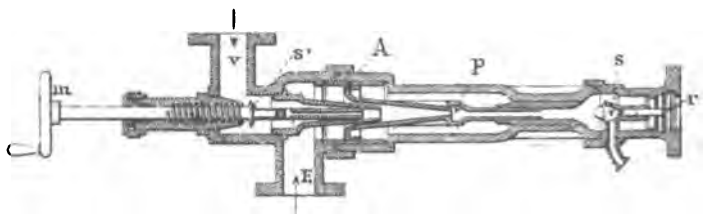


Fig. 7. **Schaeffer Budenberg.**

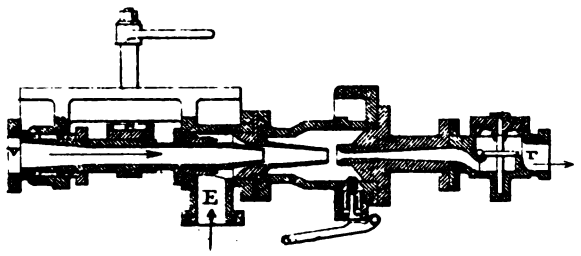


Fig. 8. **Nord-français.**

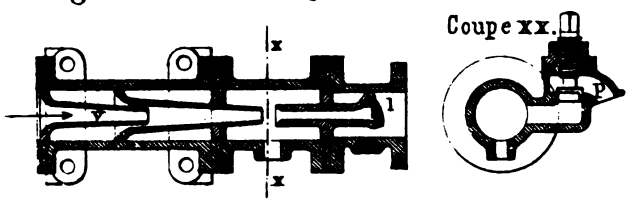
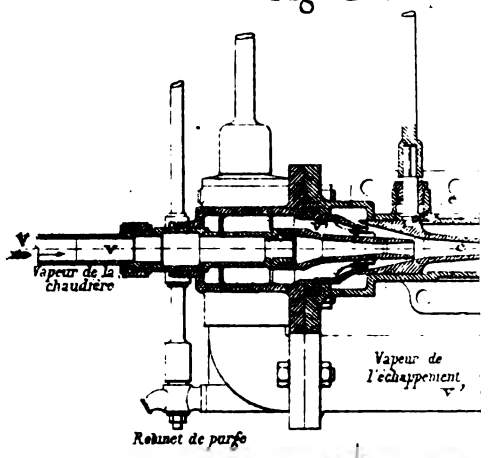


Fig. 2. 3. et 4. Injecteur d'e
Fig. 2 Coupe



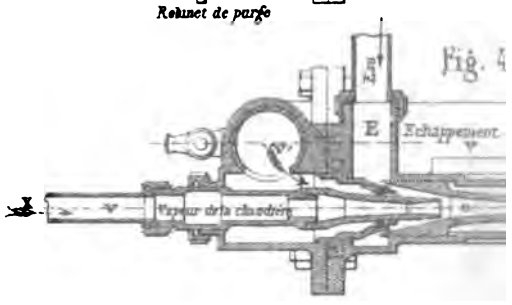
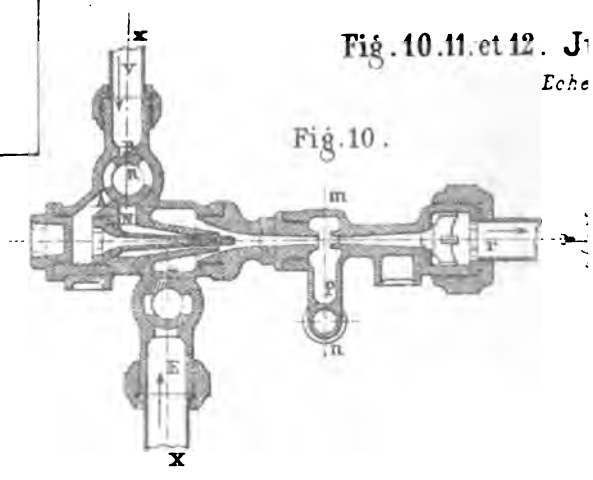


Fig. 10. 11. et 12. J
Eche

Fig. 10.



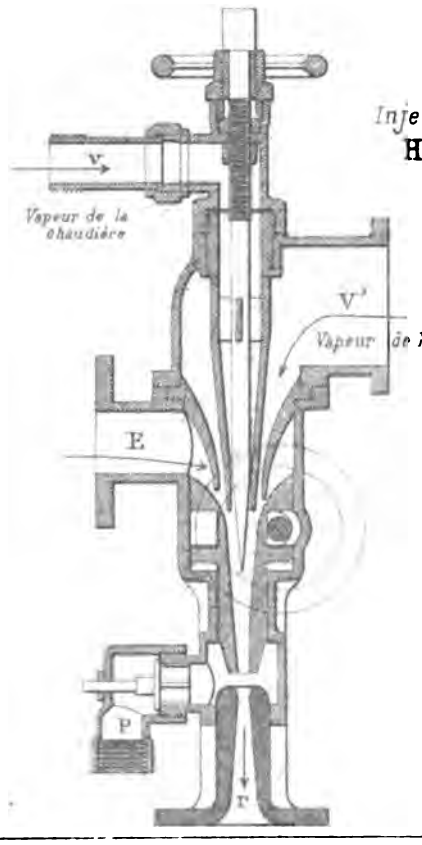
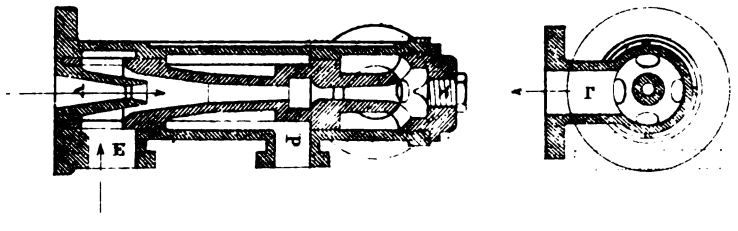


Fig. 9.
Injecteur d'échappement de
Hallam et Shepherd

Fig. 15. **Cresham.** *(non aspirant)*



Sch

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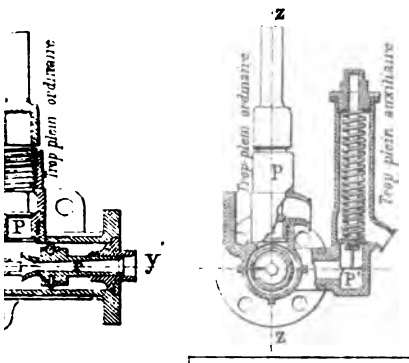
pement **Mazza.**



Coupe yy.

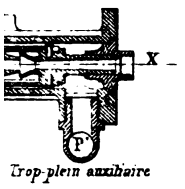


Fig. 5 et 6 **Webb.**

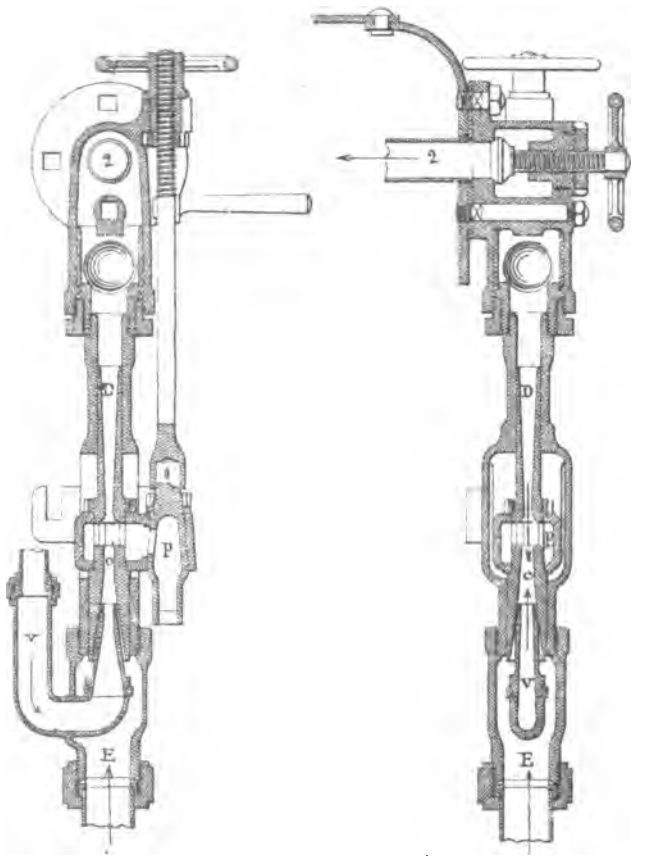
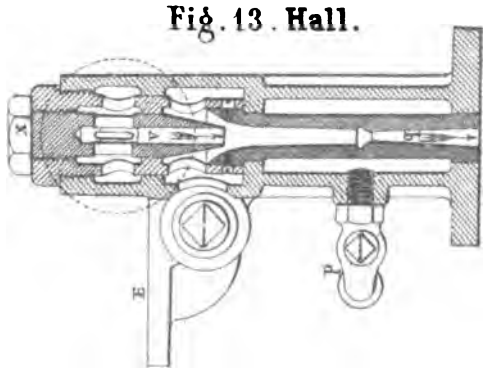


Fig. 13. **Hall.**



illemier. (*Type de* $^{5m}/_{m}$

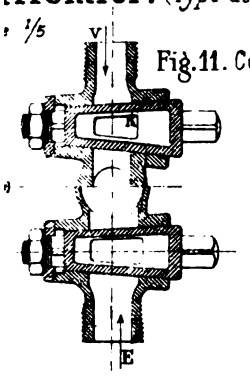
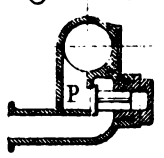


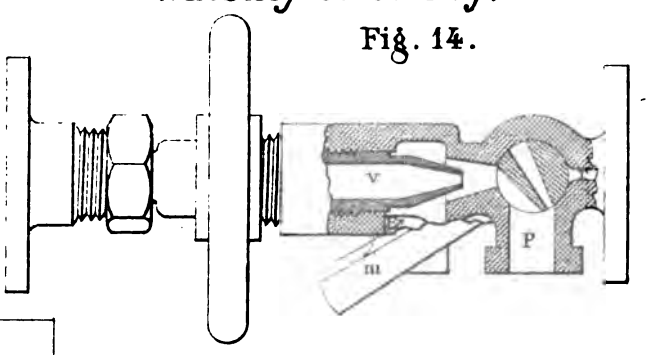
Fig. 11. Coupe xx.

Fig. 12. Coupe mn.



Whestley et Storey.

Fig. 14.



p Stewart. (*non aspirant*)

Fig. 16.

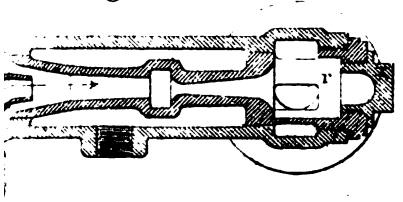


Fig. 17.
Morris et Westley.

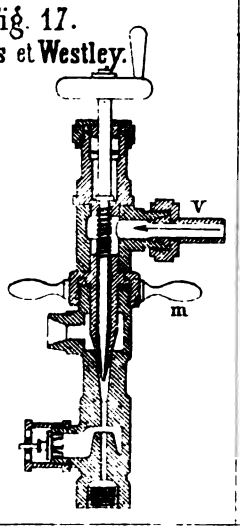


Fig. 18. **Ferrero.** (*Injecteur à aiguille fixe*

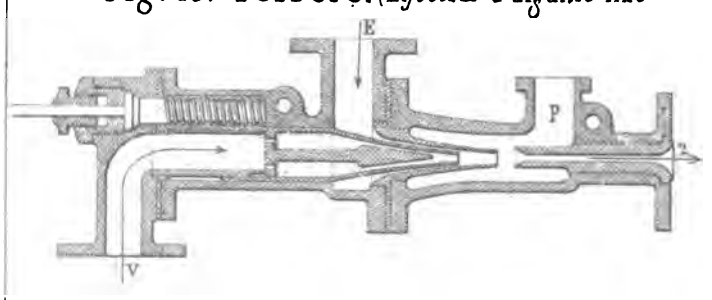


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Fig. 1.2.3 et 4. **Friedmann.** *(non aspirant)*

Fig. 1. Elévation et Coupe c'd'.

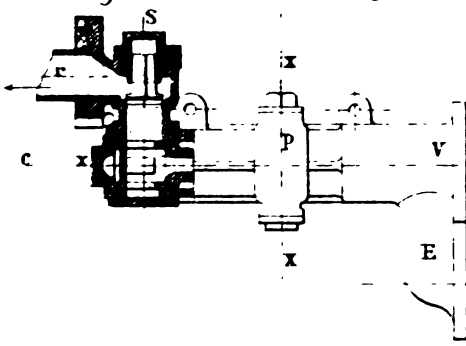


Fig. 2. Coupe **xx**.

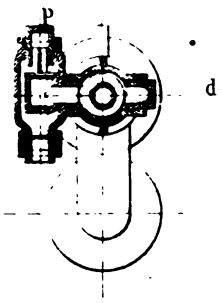


Fig. 3. Coupe **cd**.

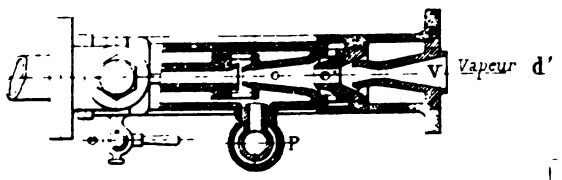
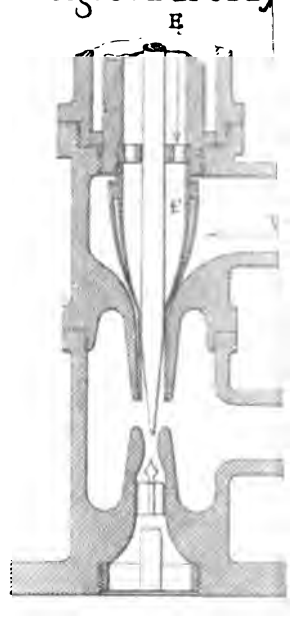


Fig. 4. Injecteur démonté.

Fig. 5. **Barclay**



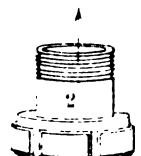
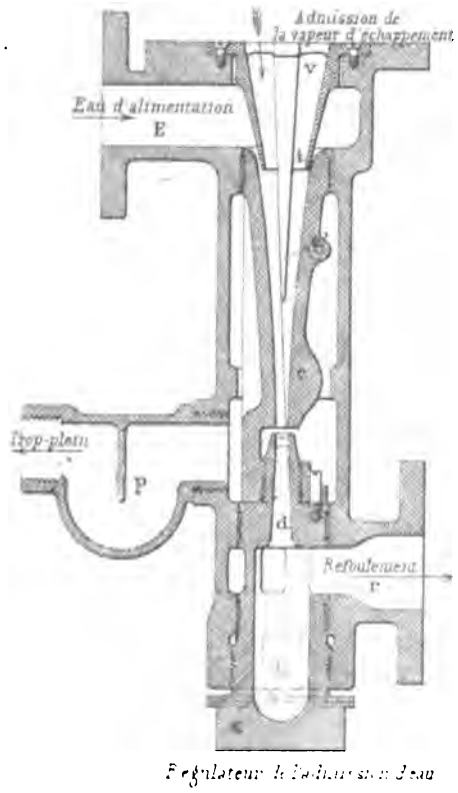


Fig. 10. Elévation.

Fig. 12.

Fig. 9. Injecteur d'échappement.
Hamer et Davie.



Régulateur de l'admission de l'eau

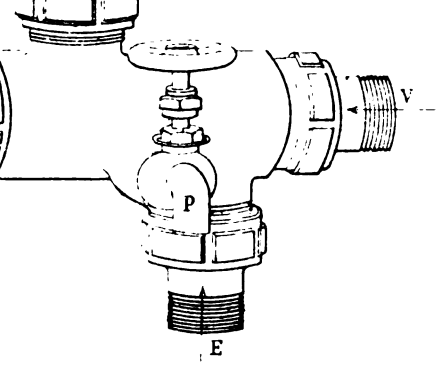


Fig. 10 et 11. **Sellers.** *(non aspirant)*

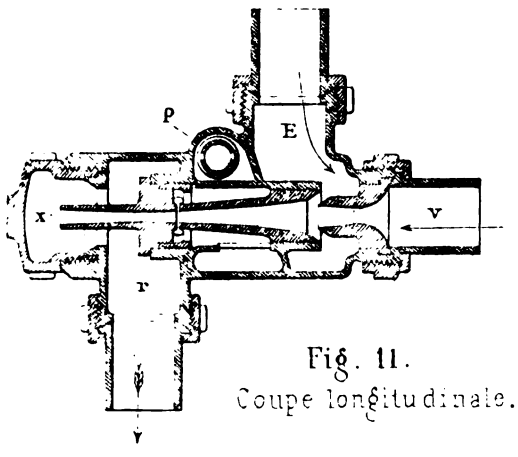


Fig. 11.
Coupe longitudinale.

TEURS

...ppe de l'aiguille

Fig. 6 et 7. **Rue.**

Fig. 6. Elévation.

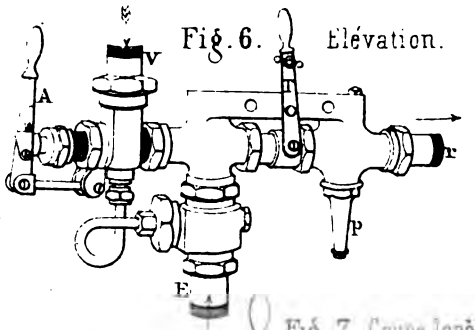


Fig. 7. Coupe longitudinale

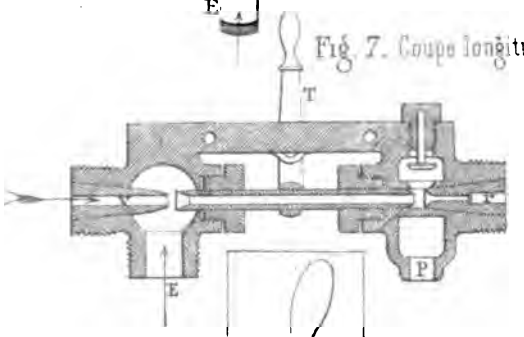


Fig. 8.
Dixon (*Injecteur éjecteur*)

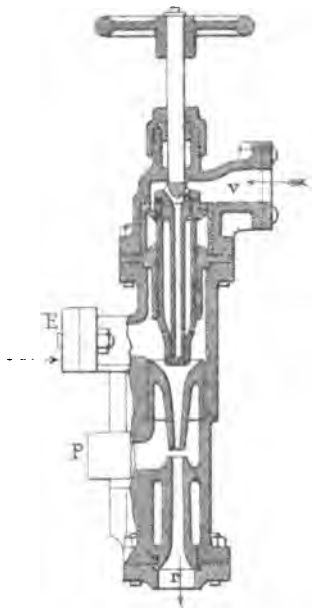


Fig. 13. Elévation.

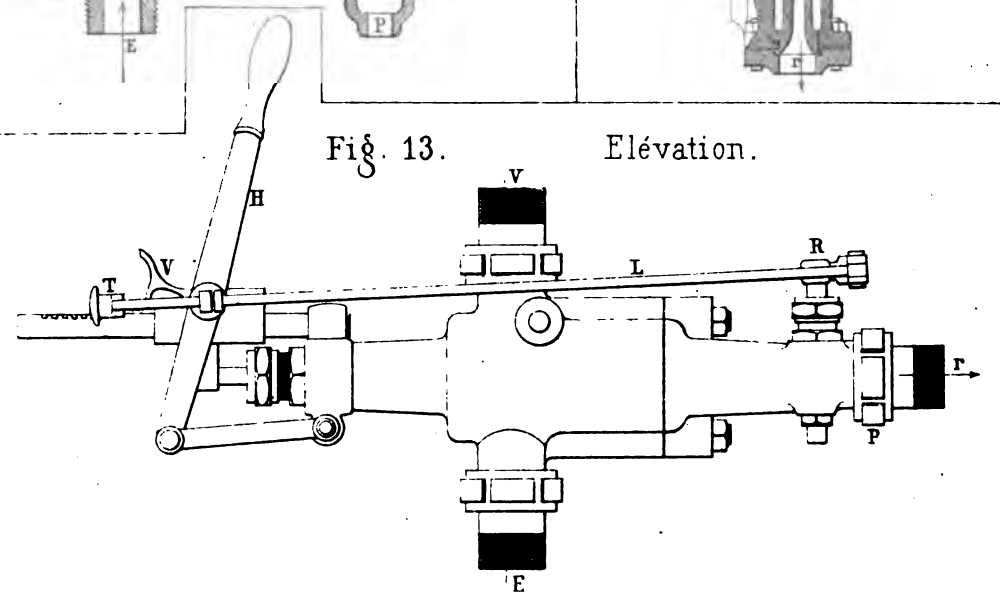
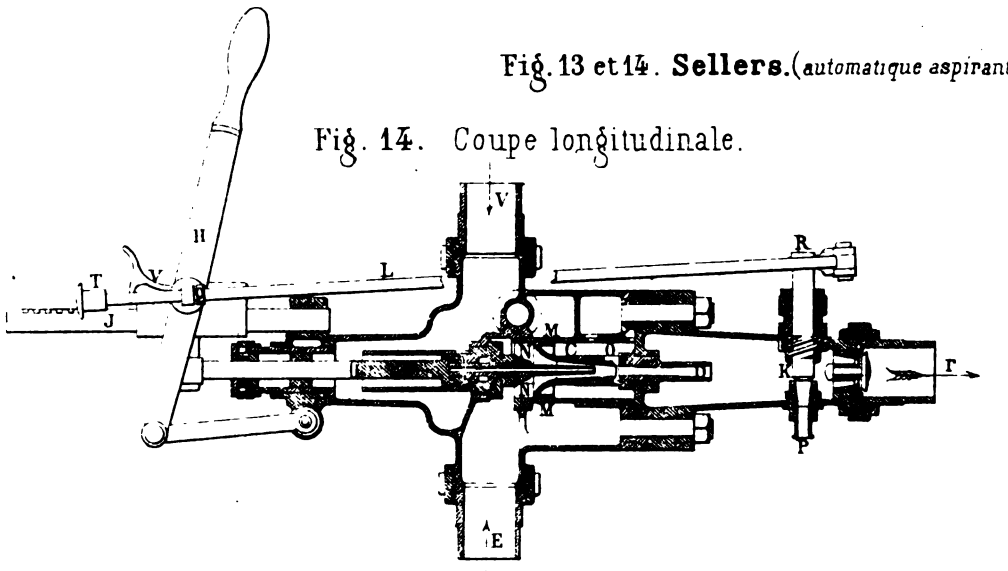


Fig. 13 et 14. **Sellers.** (*automatique aspirant*)

Fig. 14. Coupe longitudinale.



...arclay. (*aspirant*)

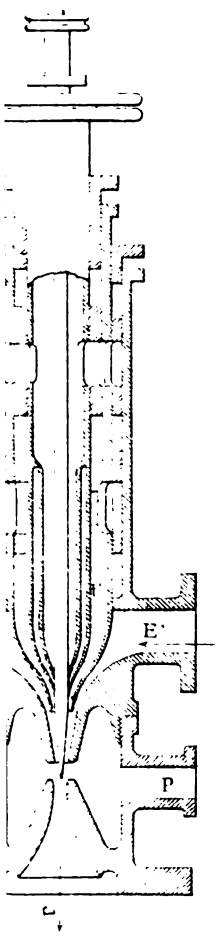


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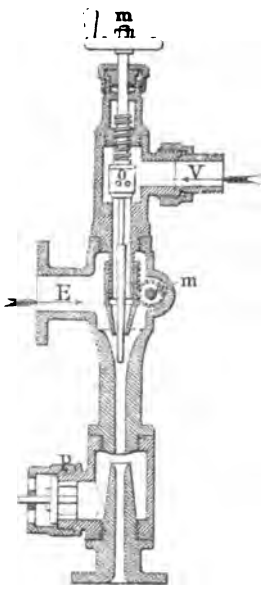
Fig. 1. **Bailey.**



Sharp et Cresham.

Fig. 2.

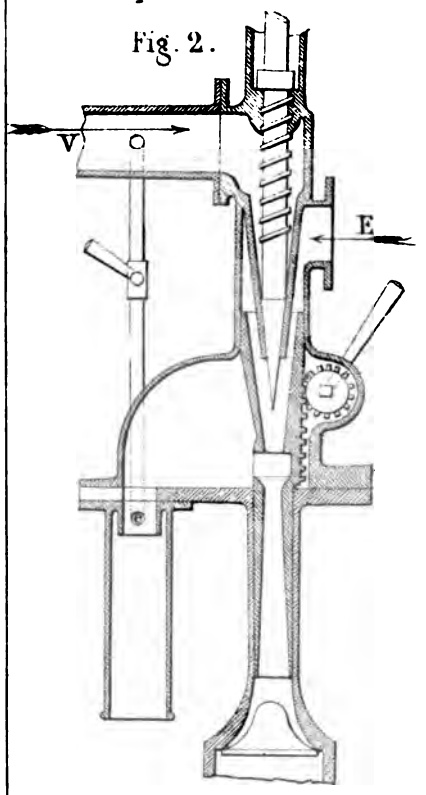
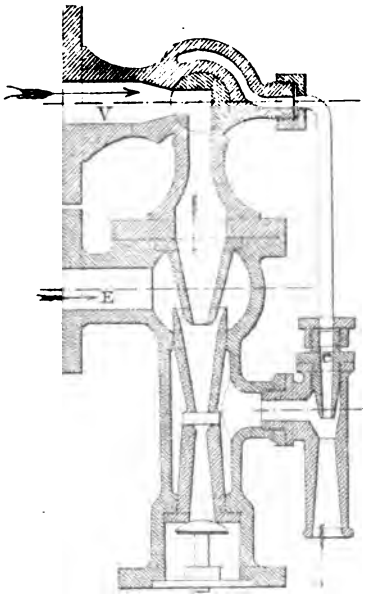


Fig 3. **Schaeffer.**

avec Ejecteur Cuau.



Réglage du jet de vapeur

Fig. 6. **Sellers.**

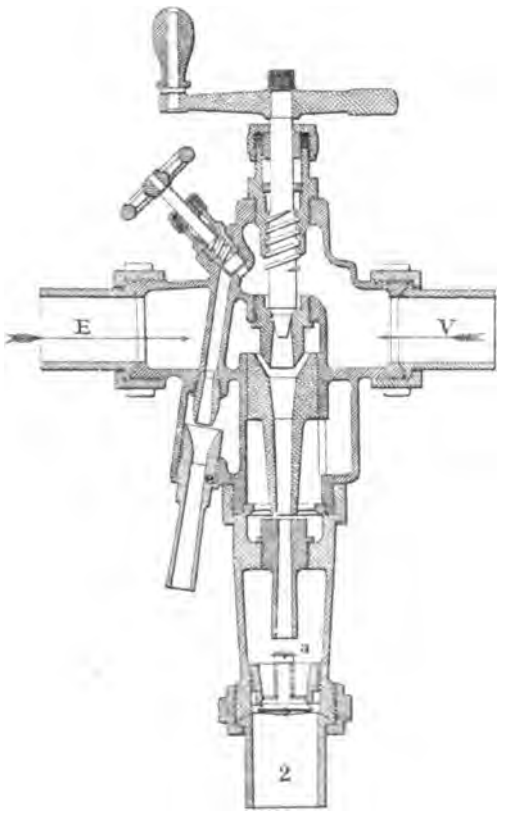


Fig. 7 et 8. **Pohlmeyer.**

Fig. 8. Ensemble.

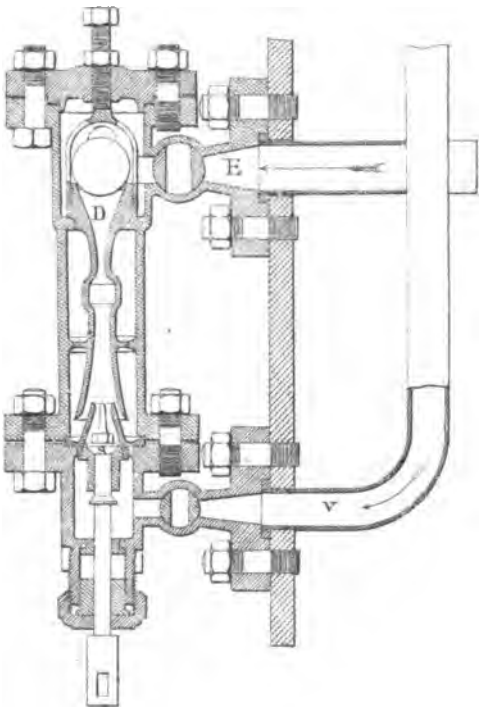
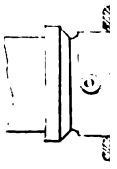


Fig. 9.



EJECTEURS.

Fig. 4. Irwin.

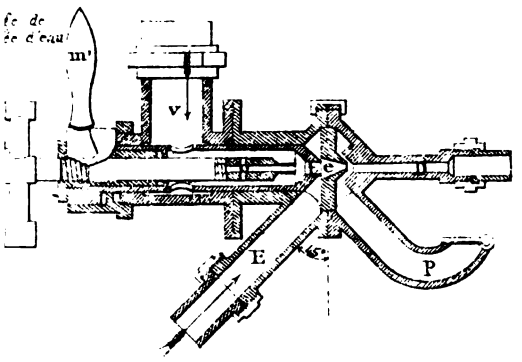


Fig. 5.
Colford-Niay *avec Ejecteur Cuau.*

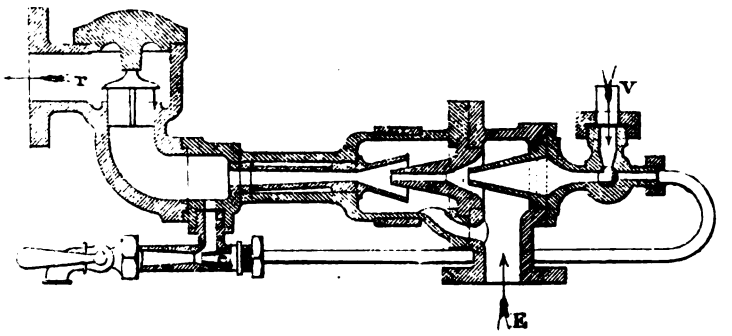


Fig. 10. Sam.

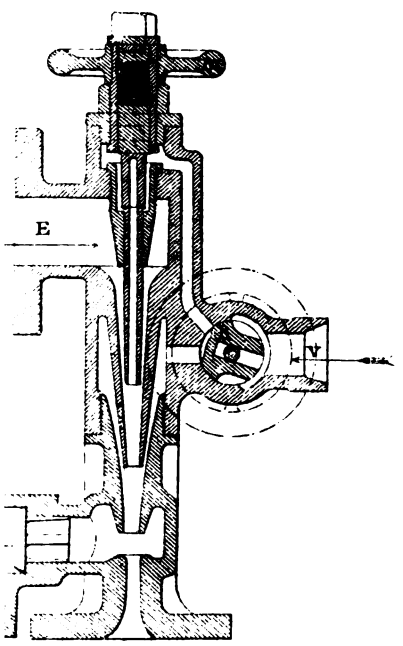
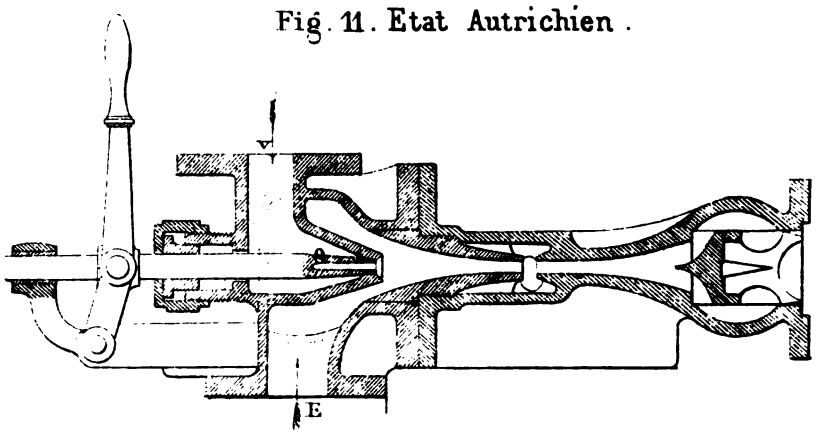


Fig. 11. Etat Autrichien.



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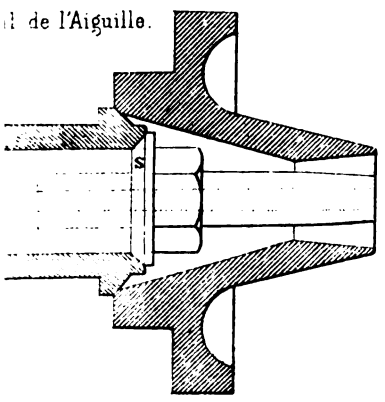
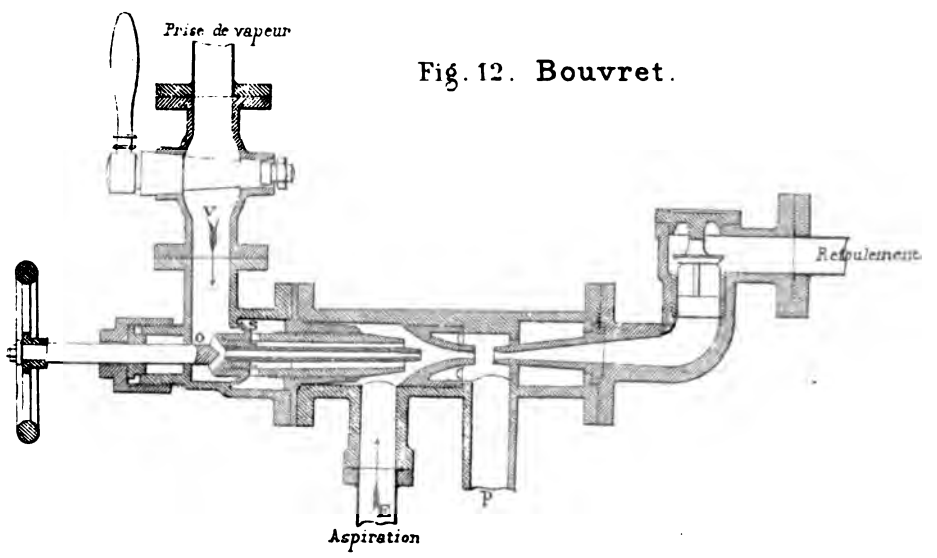


Fig. 12. **Bouvret.**



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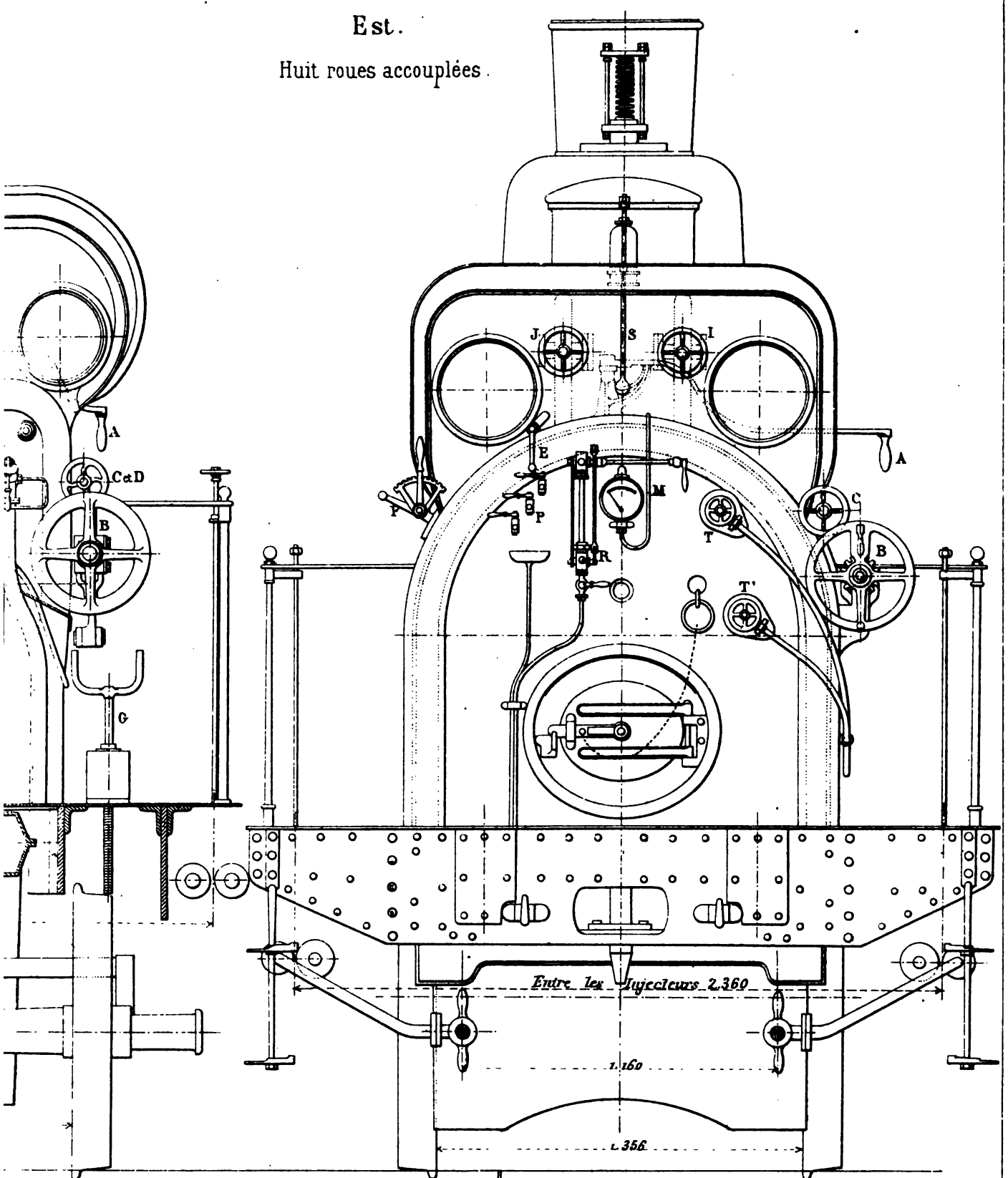
Huit roues accouplées.



P Robinets de jauge
R Niveau d'eau.
S Sifflet.

T, T' } Contre-vapeur { Vapeur. Eau
U Frein à main.
V Frein à vide ou à air comprimé

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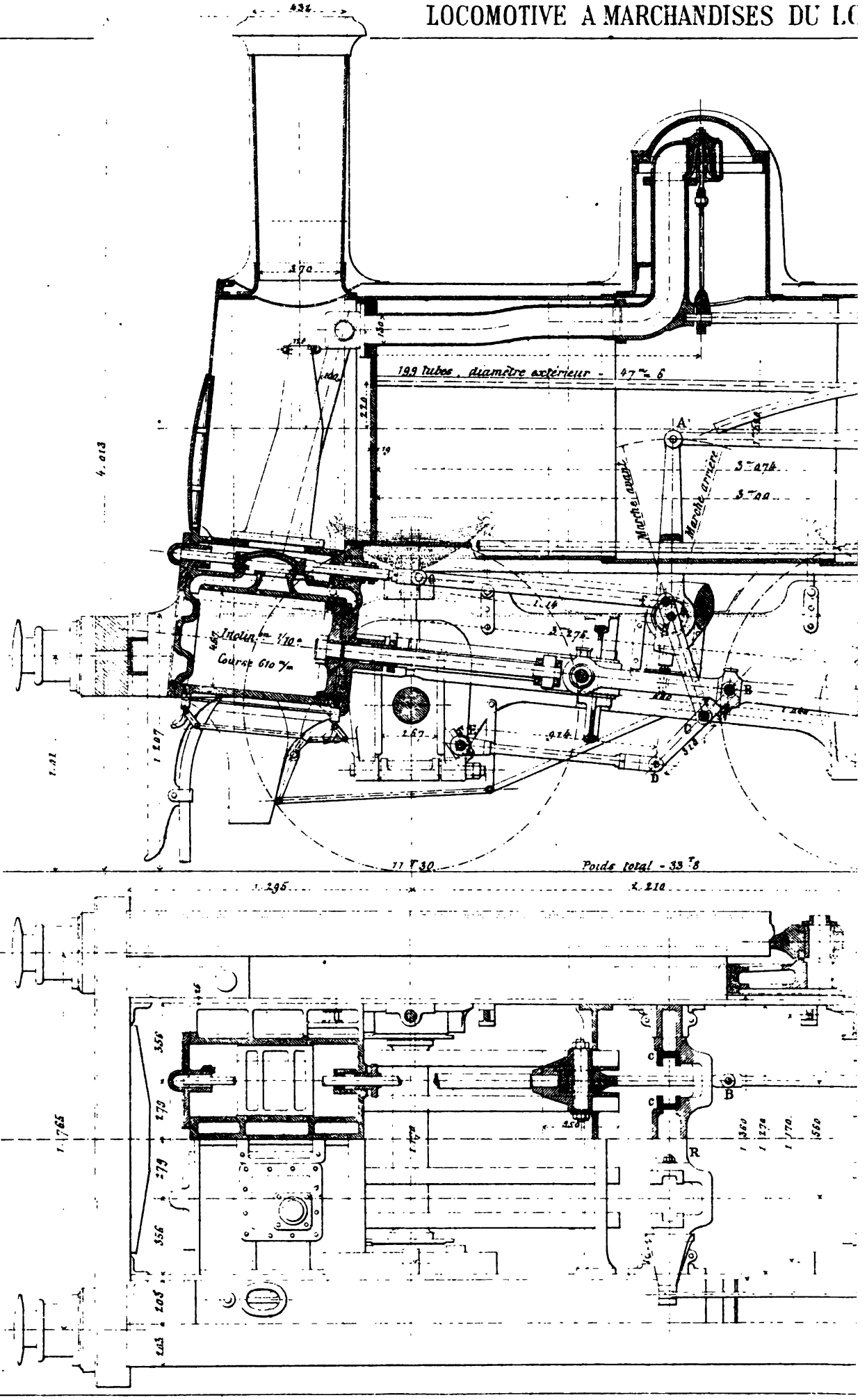

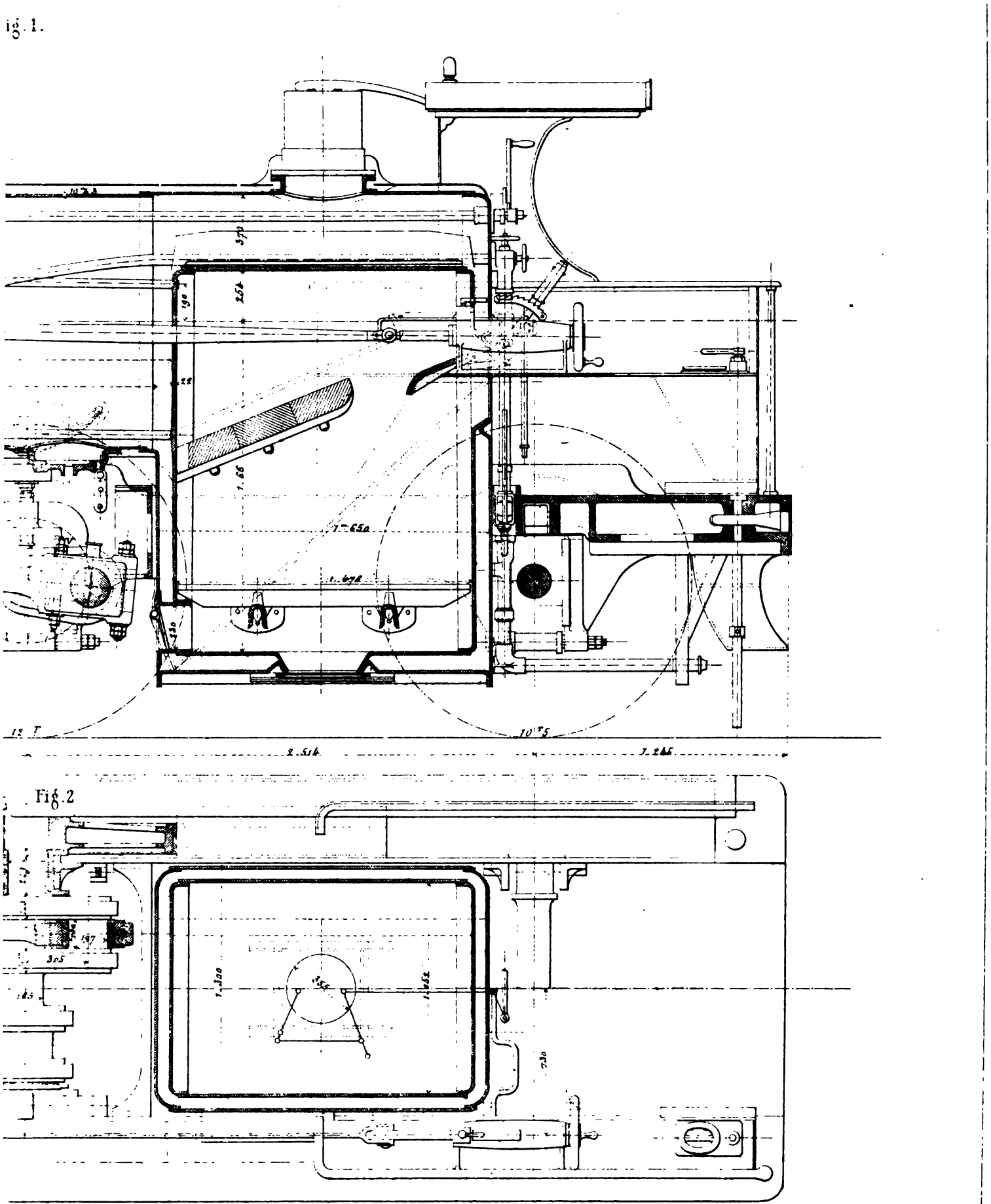

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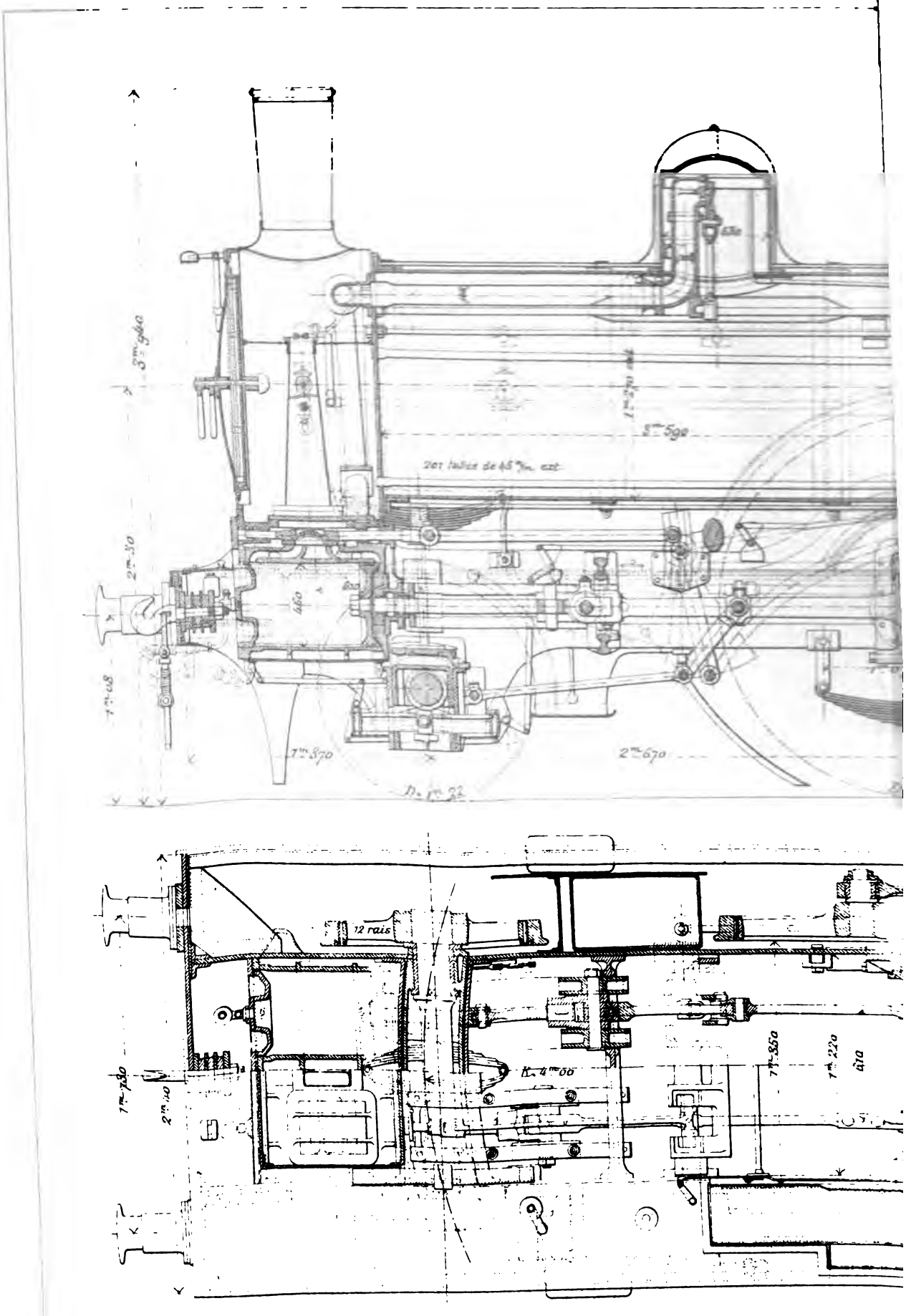

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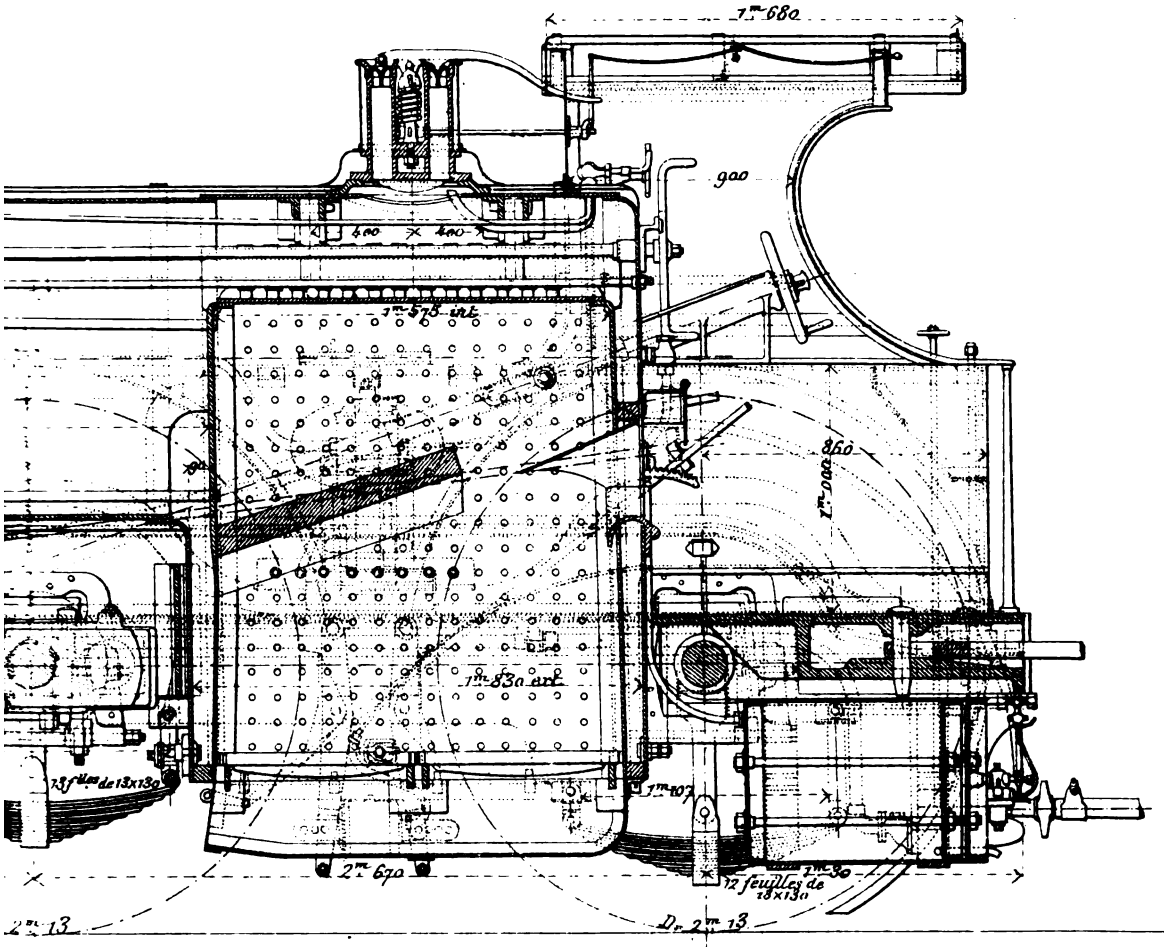

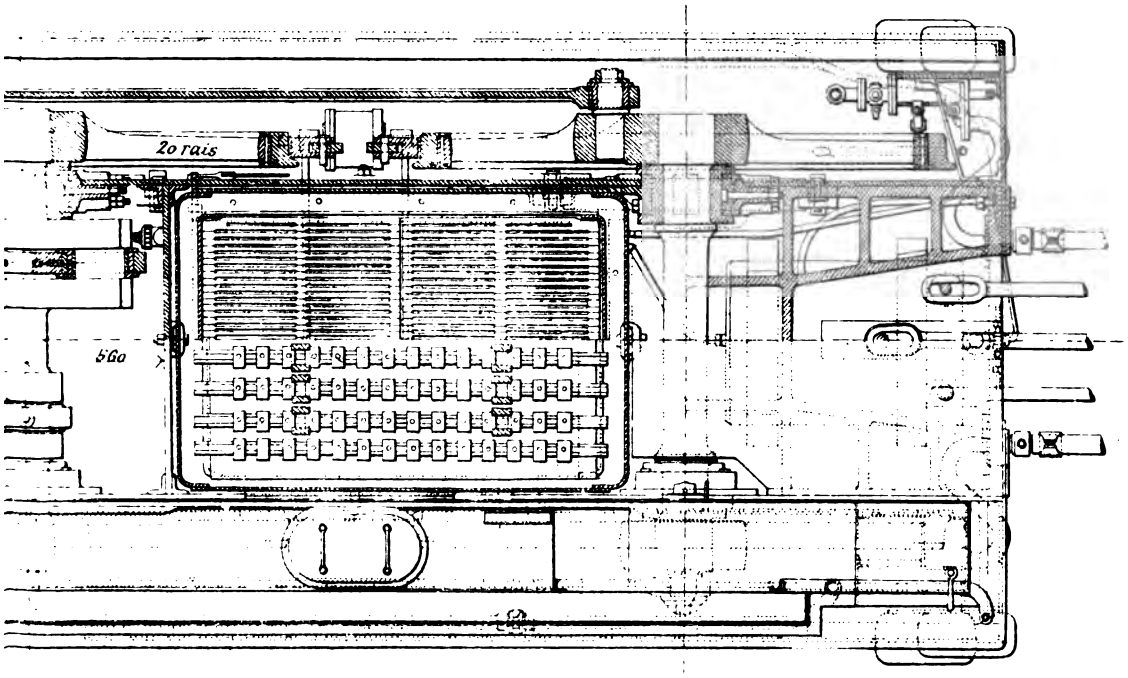

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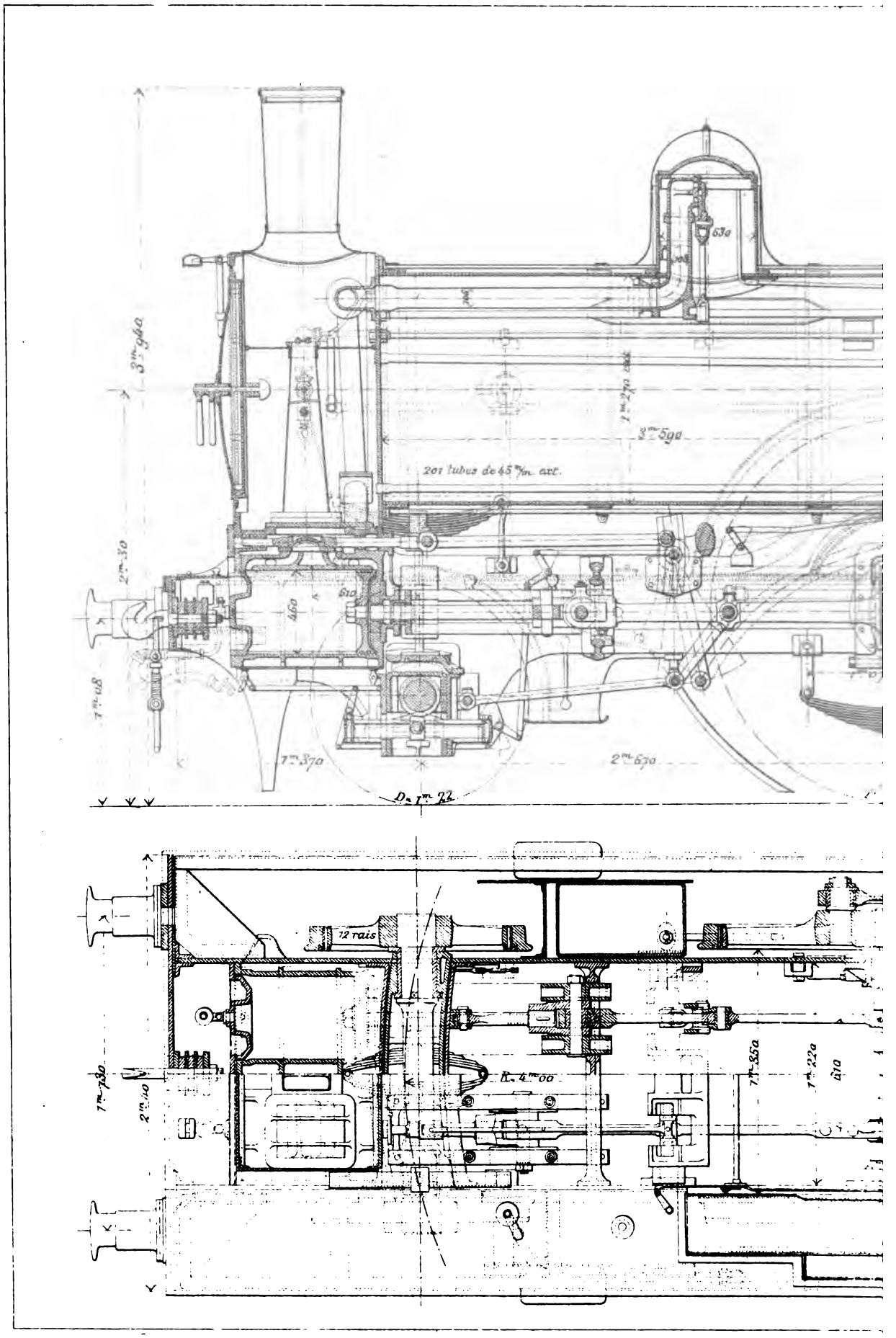

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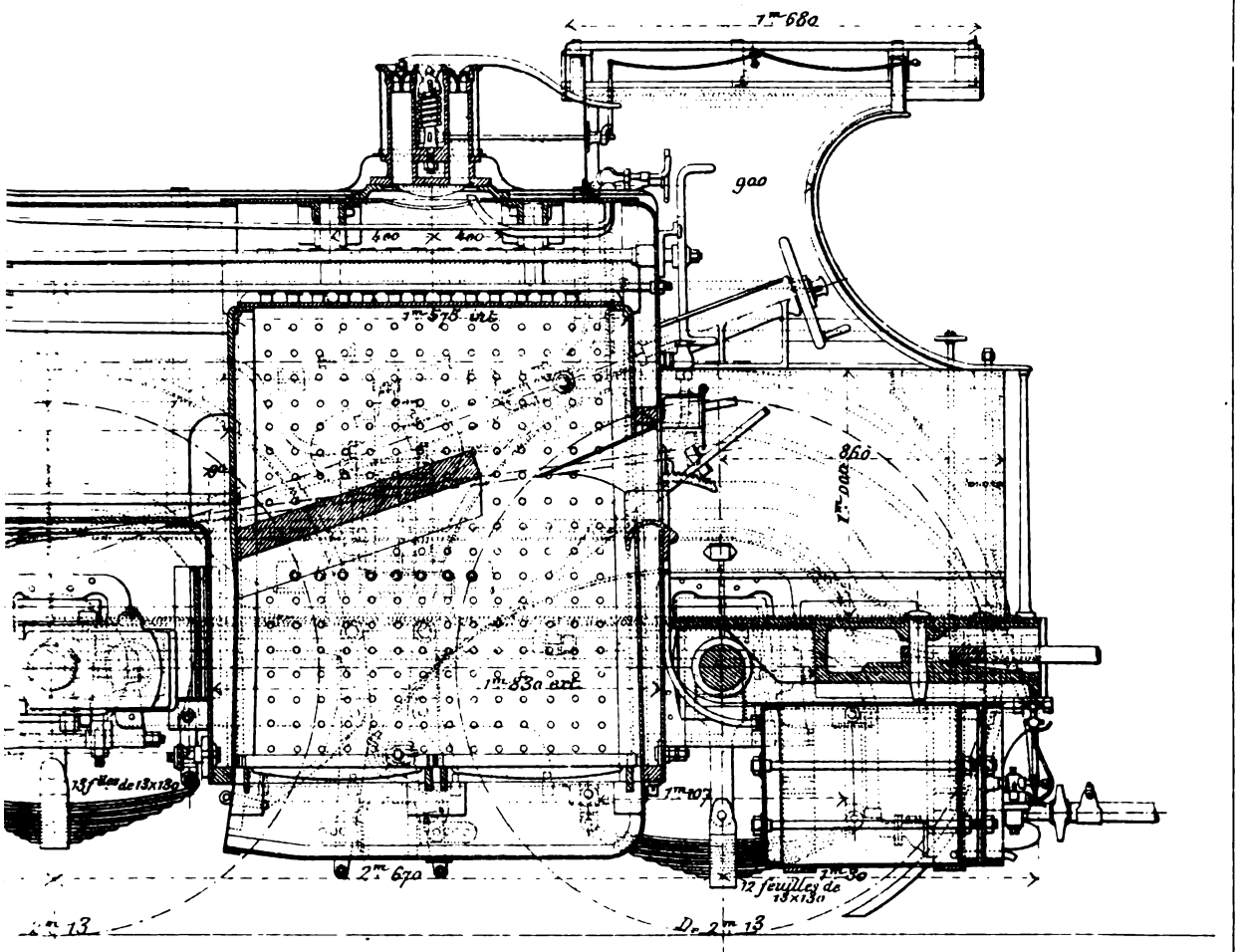

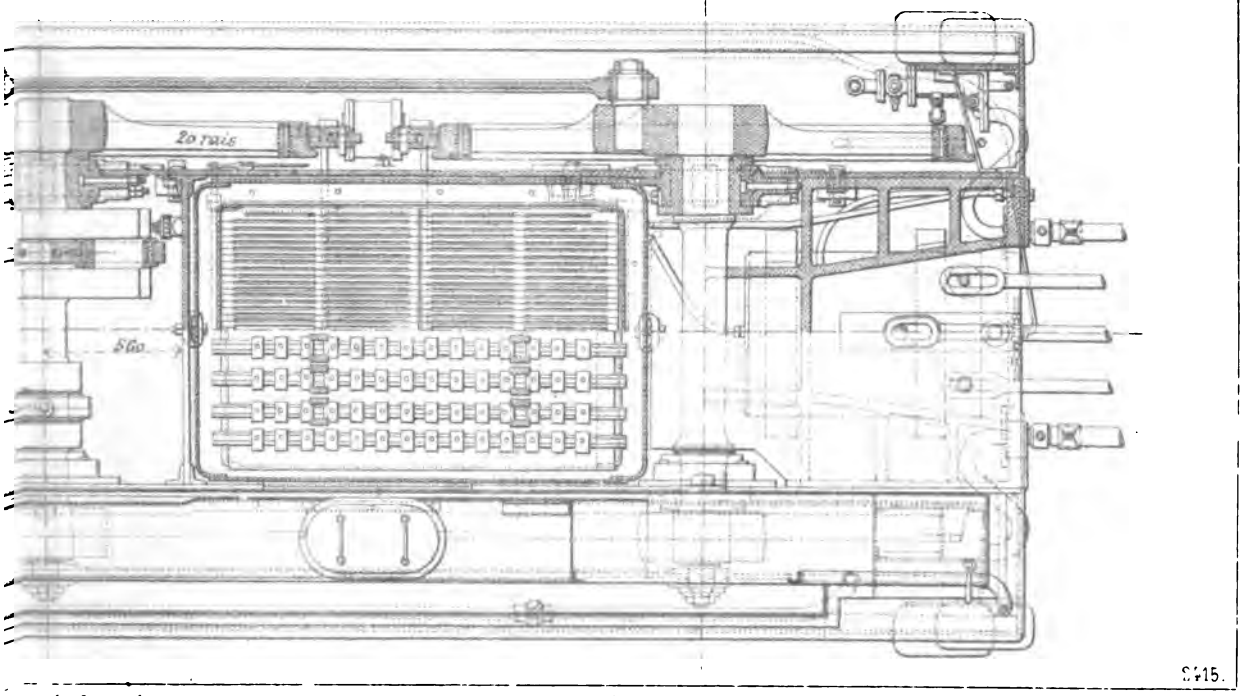

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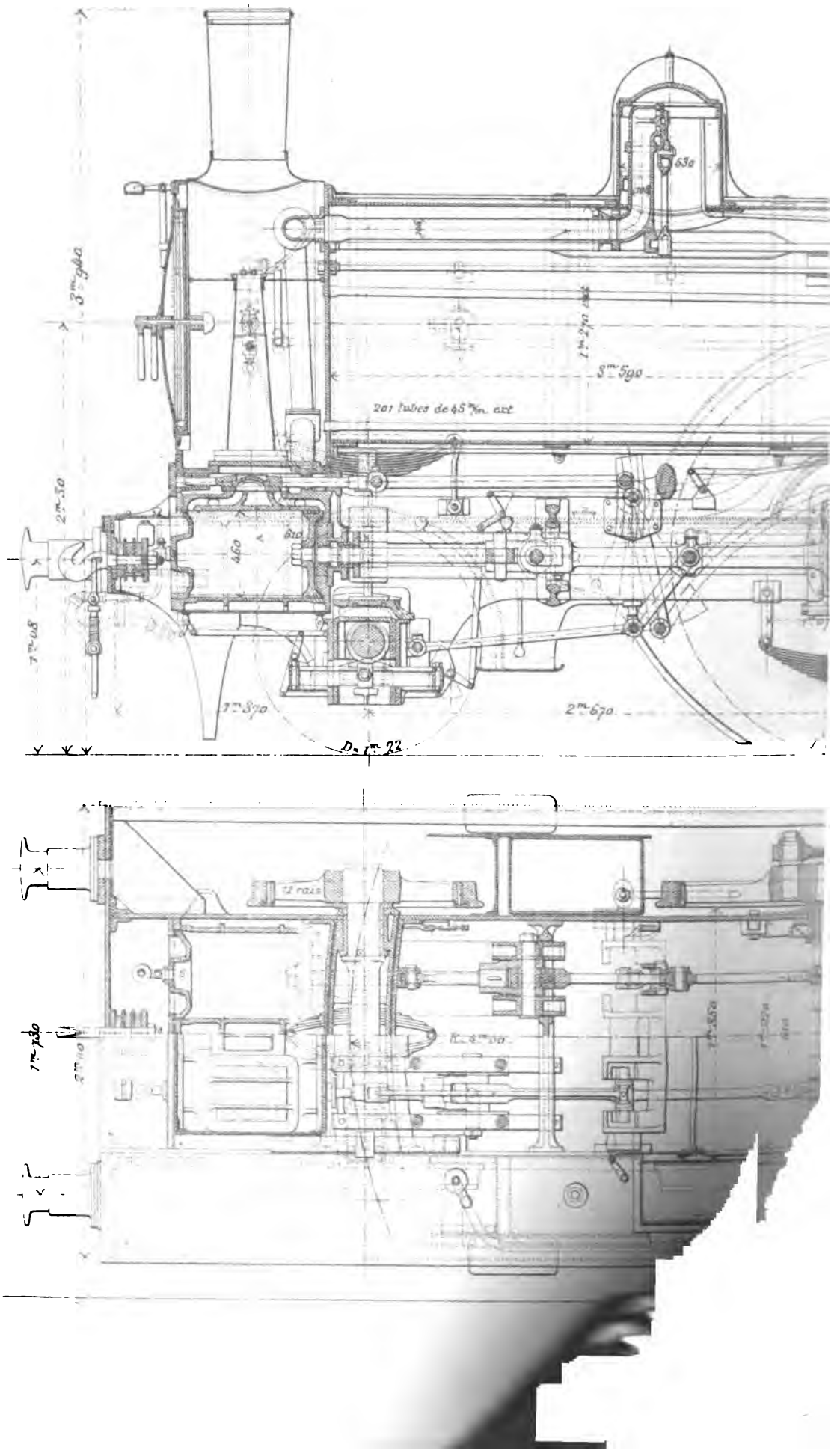

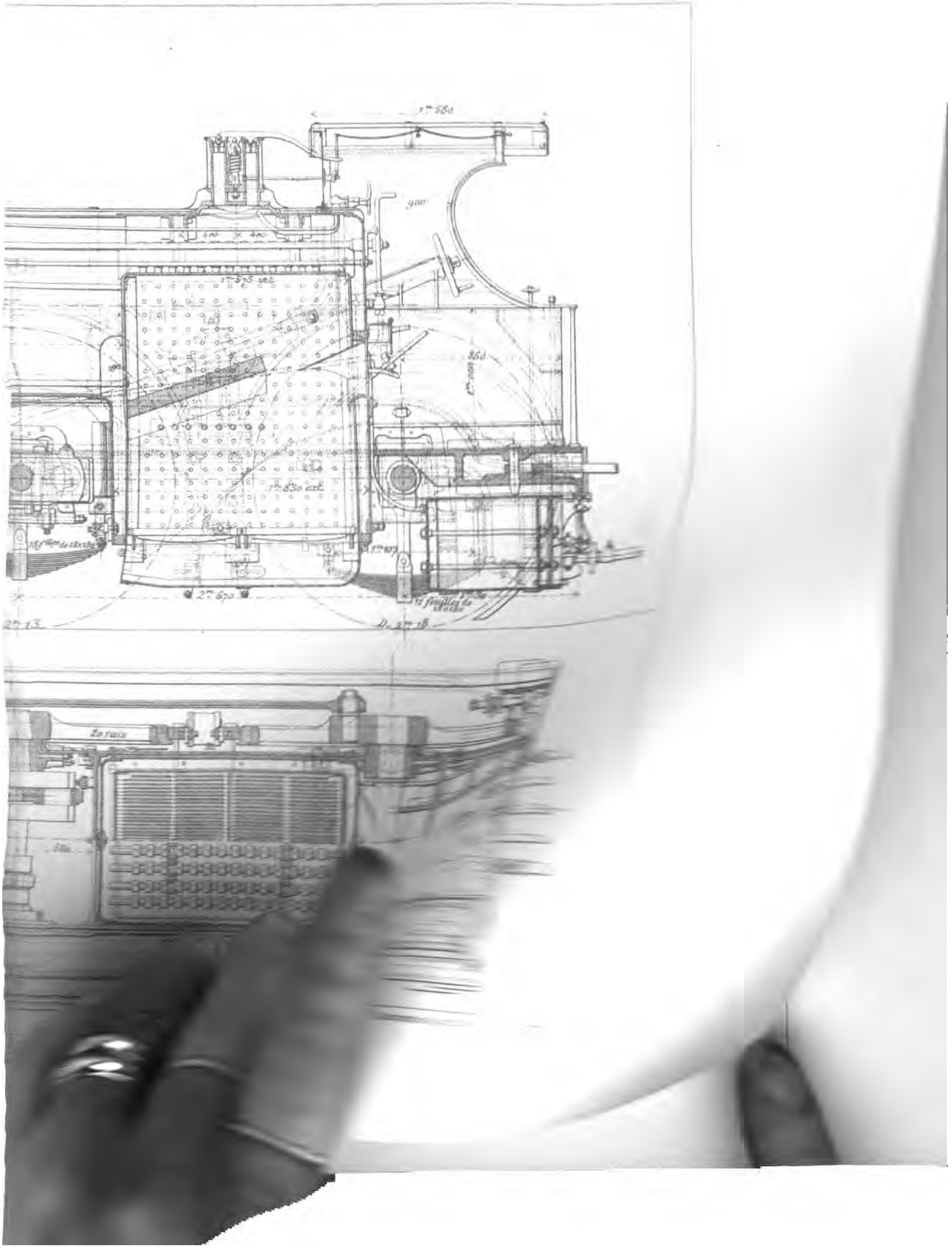

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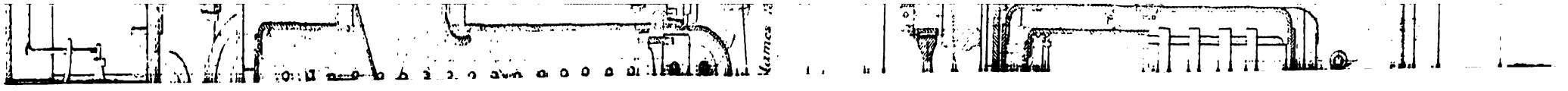

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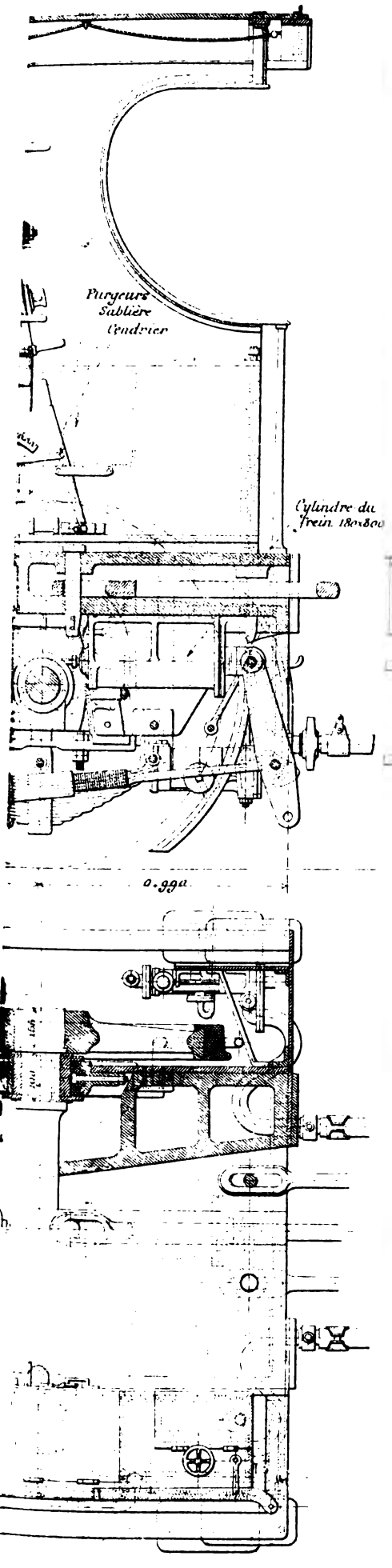

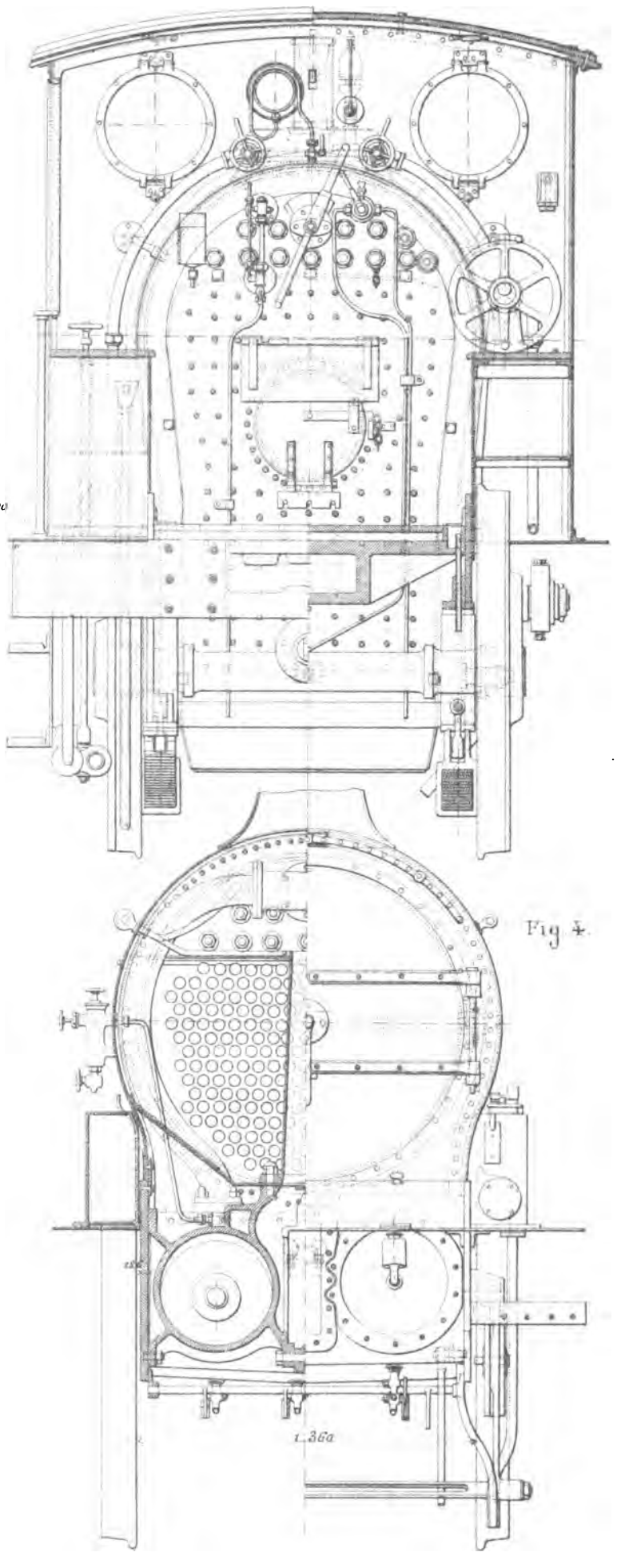

Fig 4.

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Fig. 1.

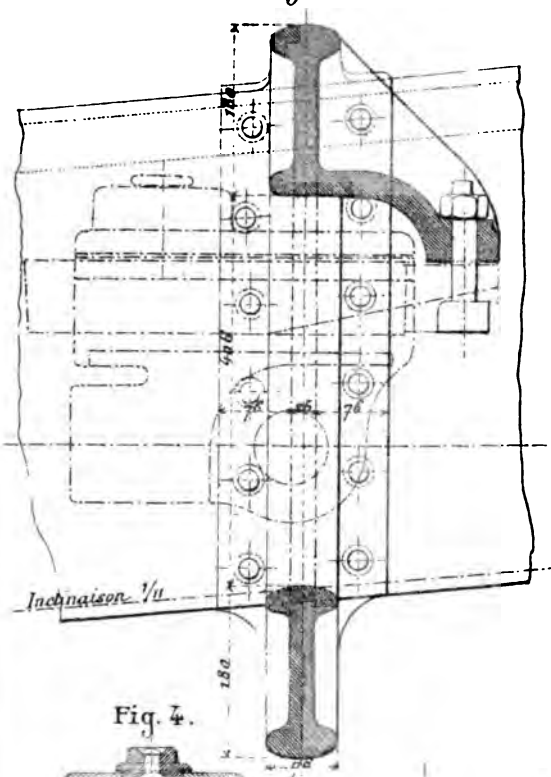


Fig. 2.

Fig. 1.2 et 3.
Détail du support du mécanisme.

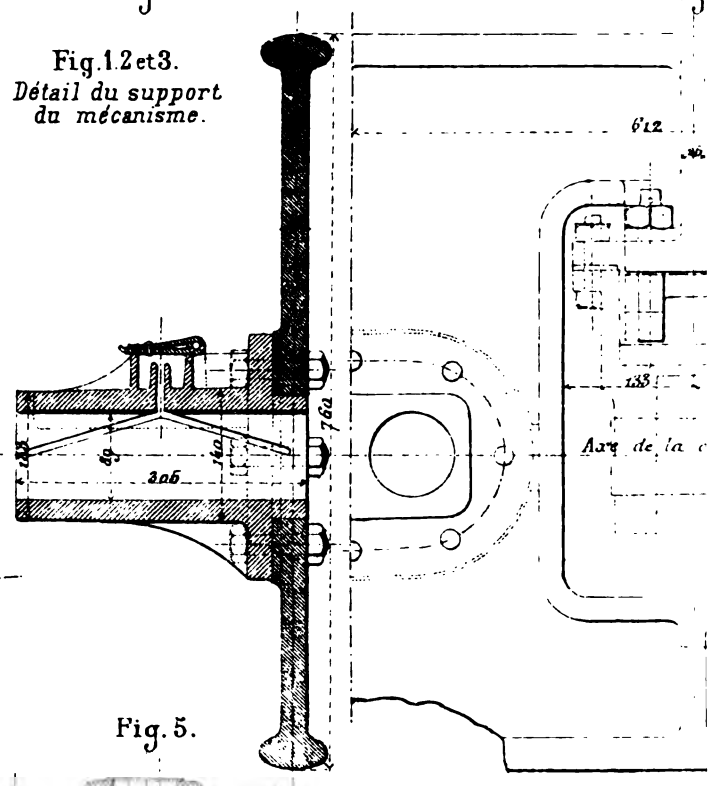
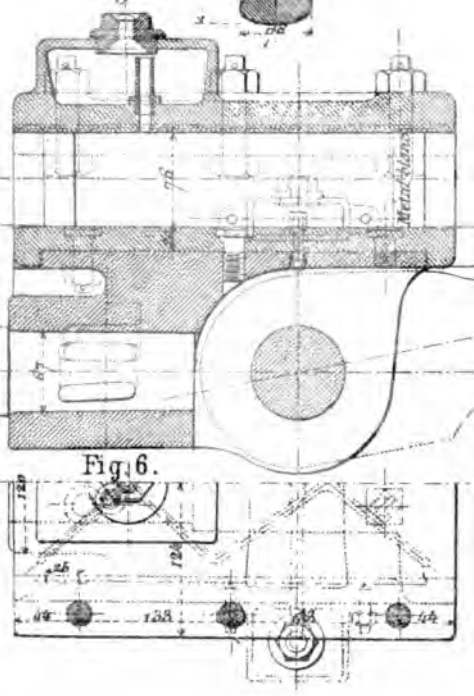


Fig.

Fig. 4.



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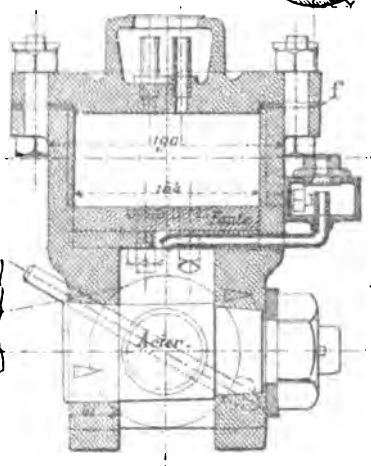


Fig. 6.

Fig. 4.5 et 6.
Crosse des Pistons.

Fig.

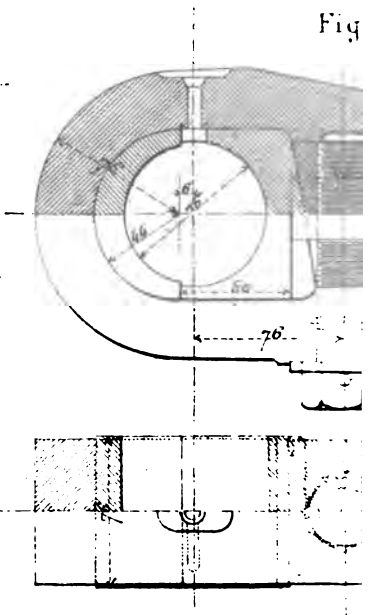
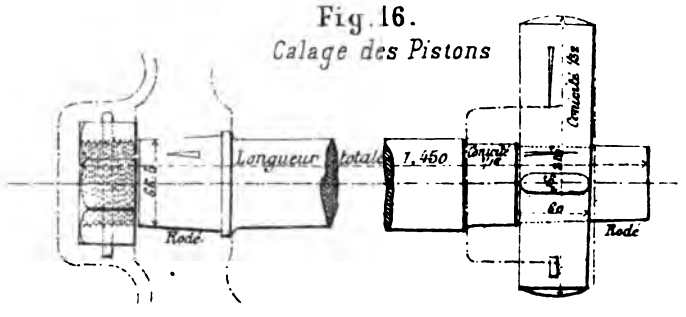
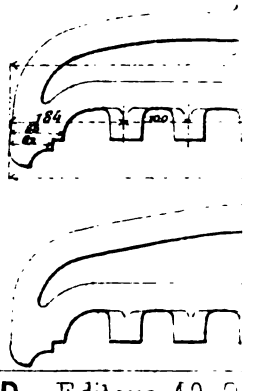


Fig. 16.
Calage des Pistons





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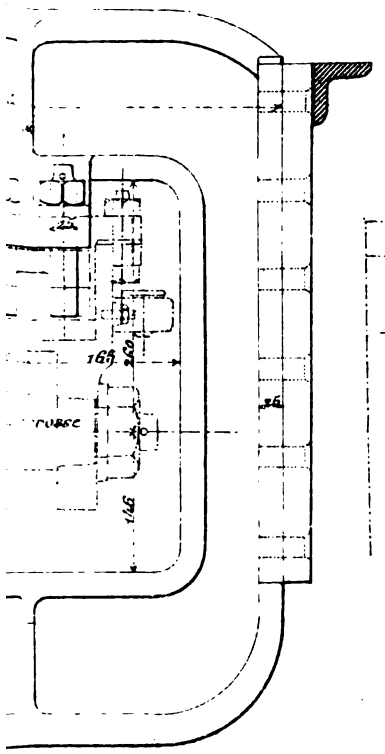
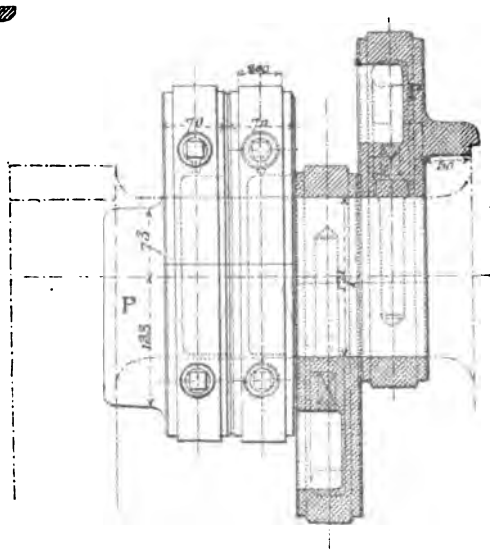


Fig. 9.

Fig. 9 et 10.
Exentriques.



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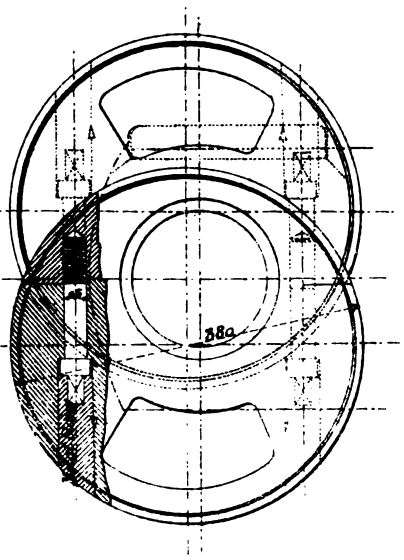

Fig. 11.

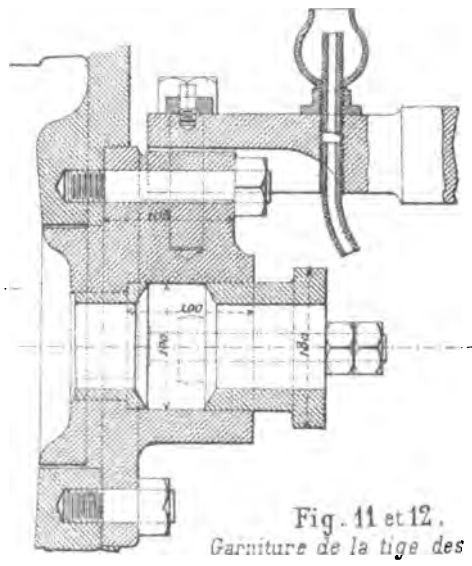

Fig. 12.

Fig. 7 et 8.
Petite tête de bielle

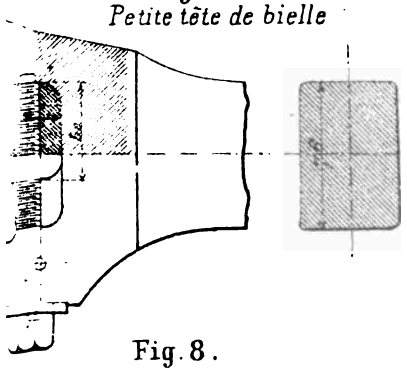

Fig. 8.

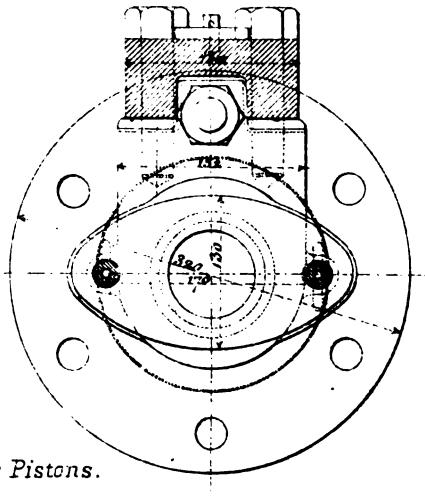

Fig. 11 et 12.
Garniture de la tige des Pistons.

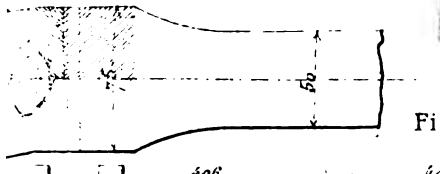

Fig. 13.

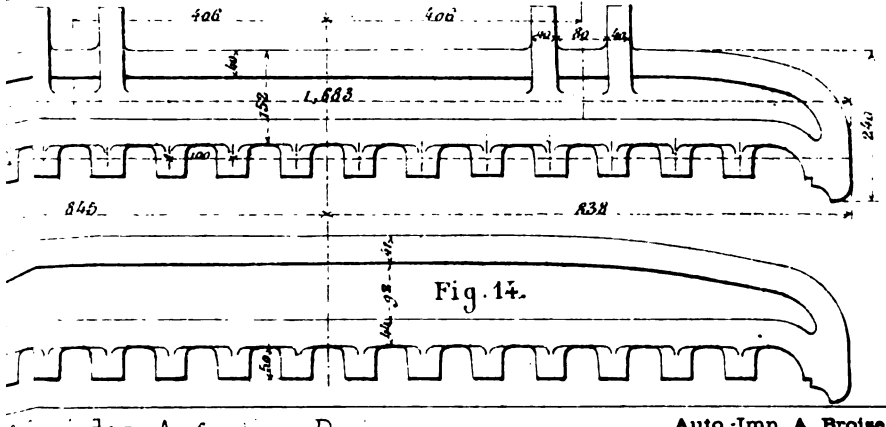

Fig. 14.

Fig. 15.

Fig. 13.14 et 15.
Poutrelles du foyer.

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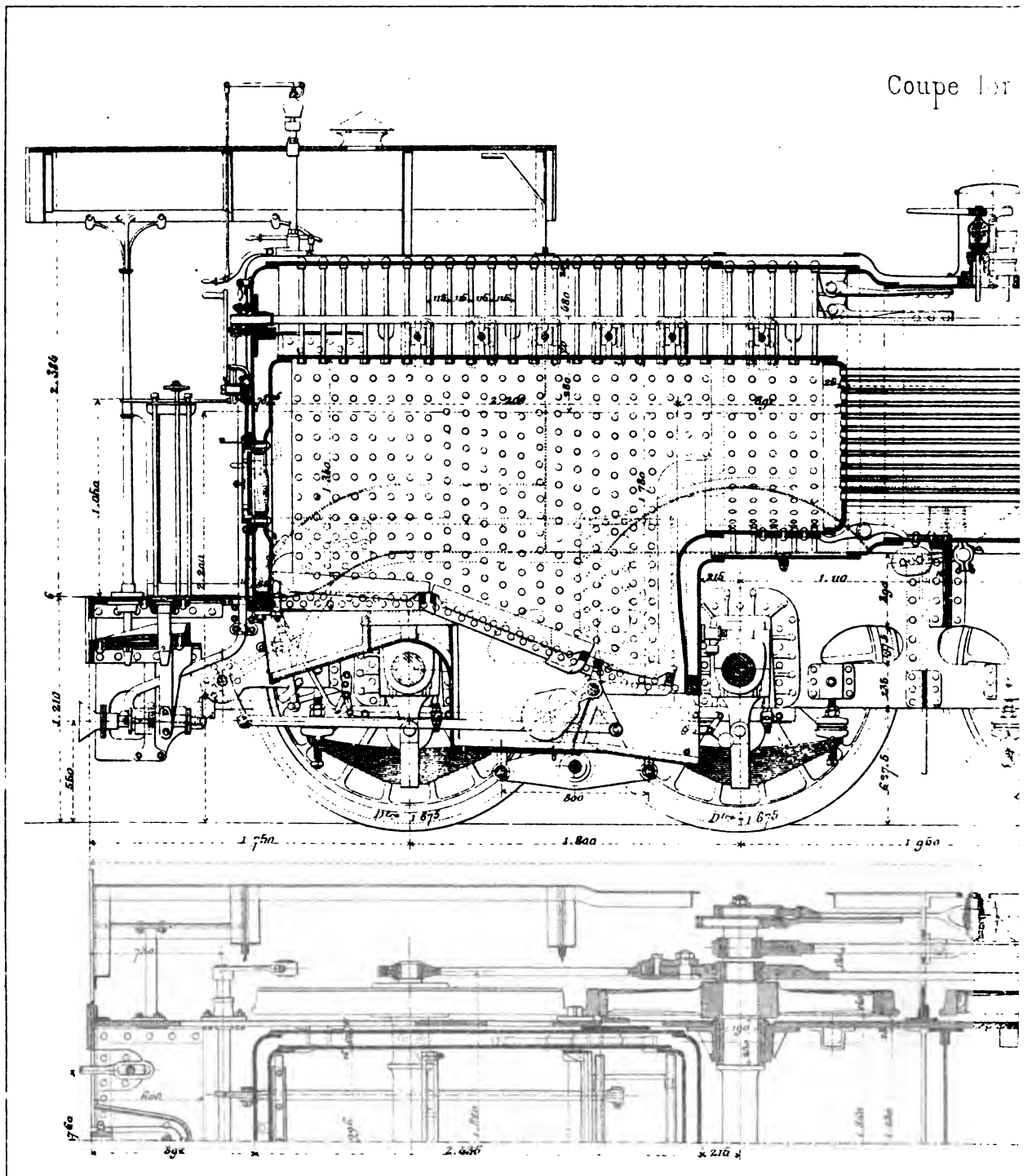

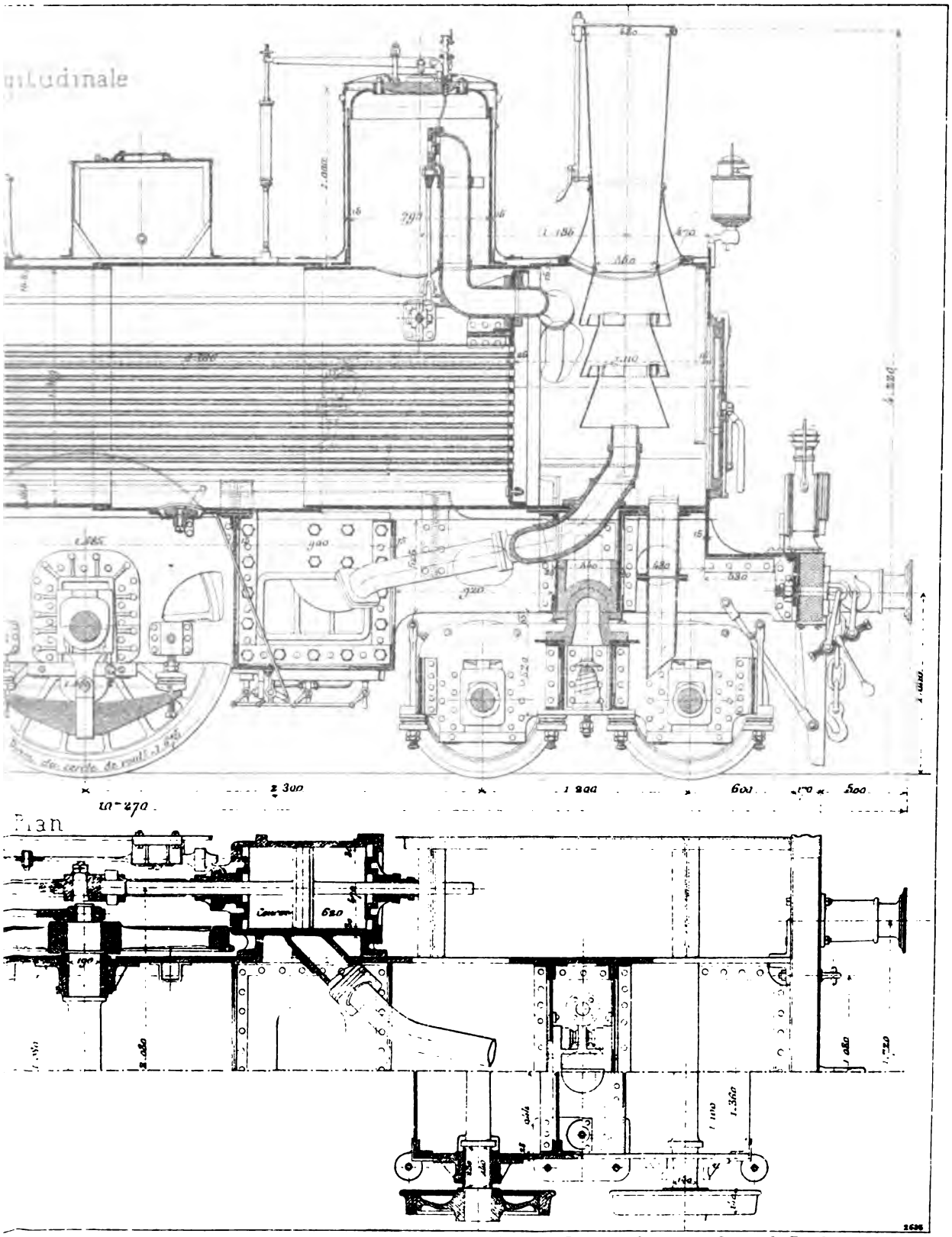

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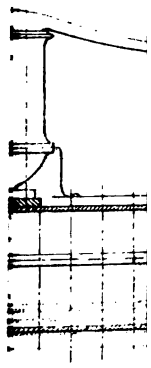

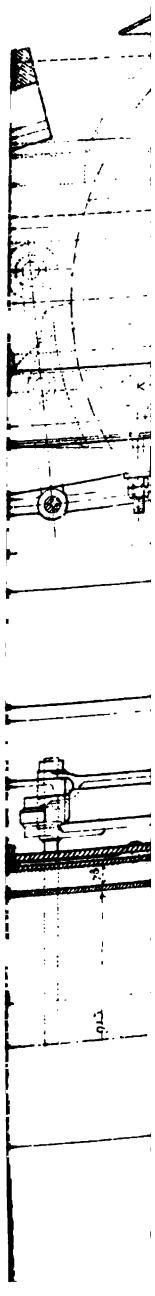

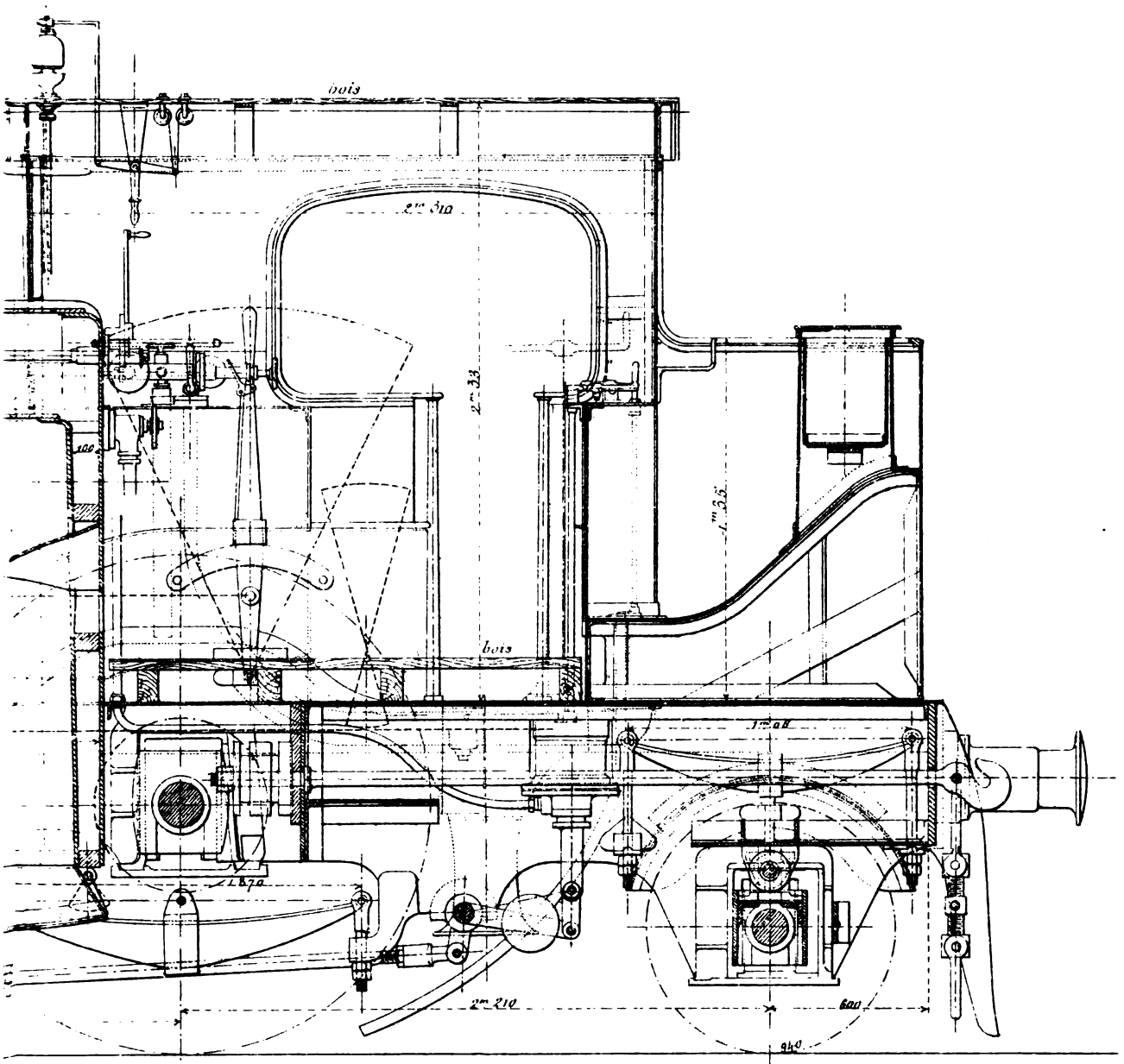

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Fig. 1. Coupe par l'axe de la chaudi[illegible]

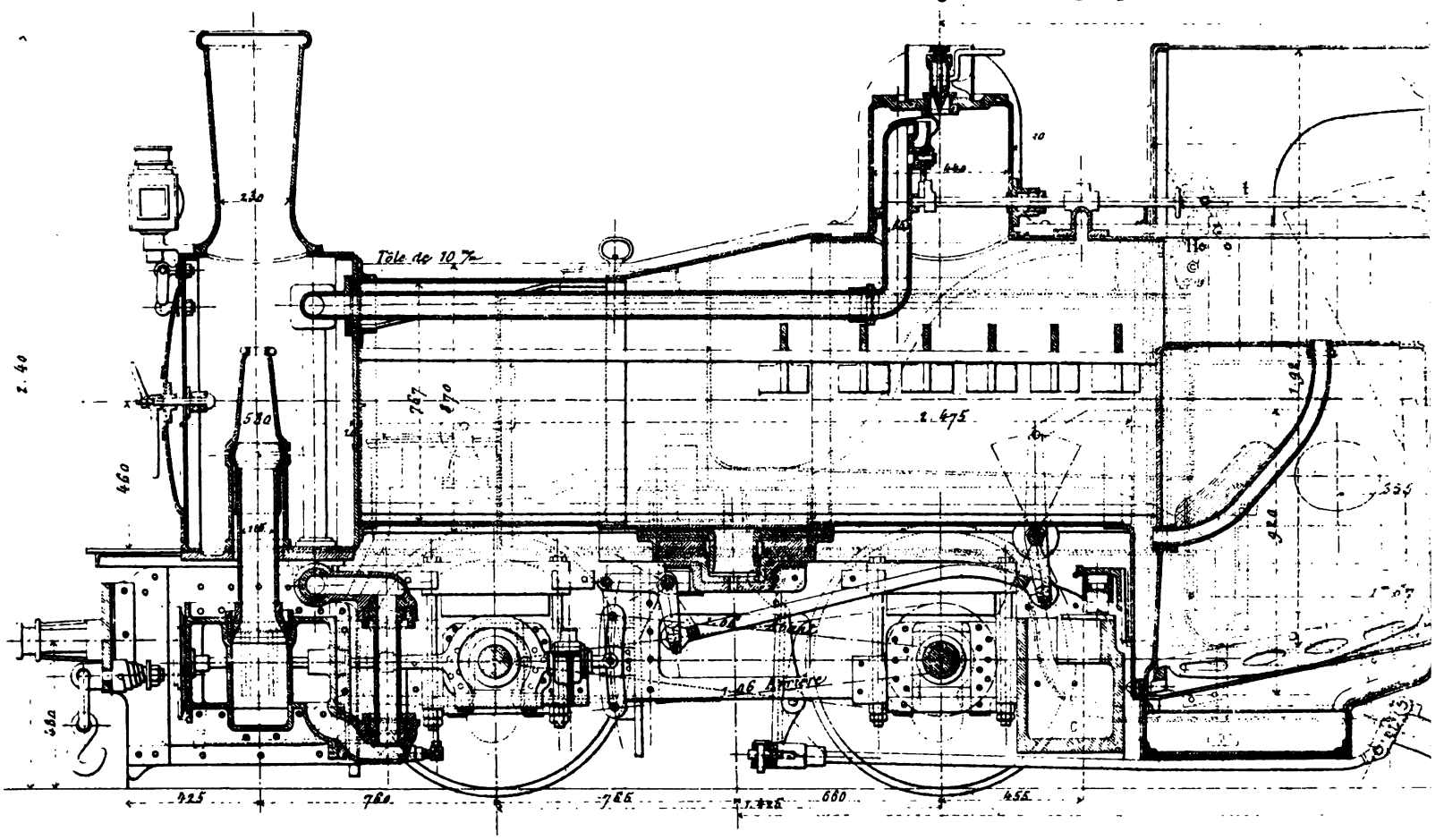
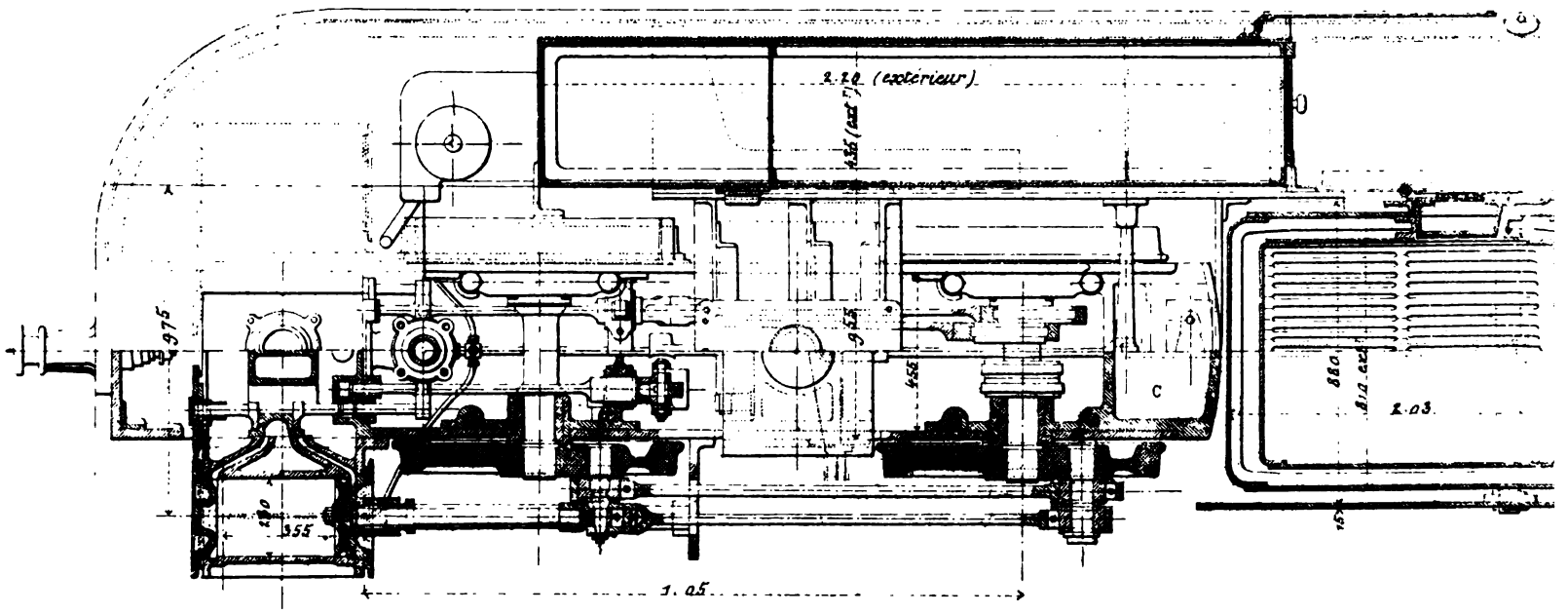


Fig. 2. Plan



re et Élévation longitudinale

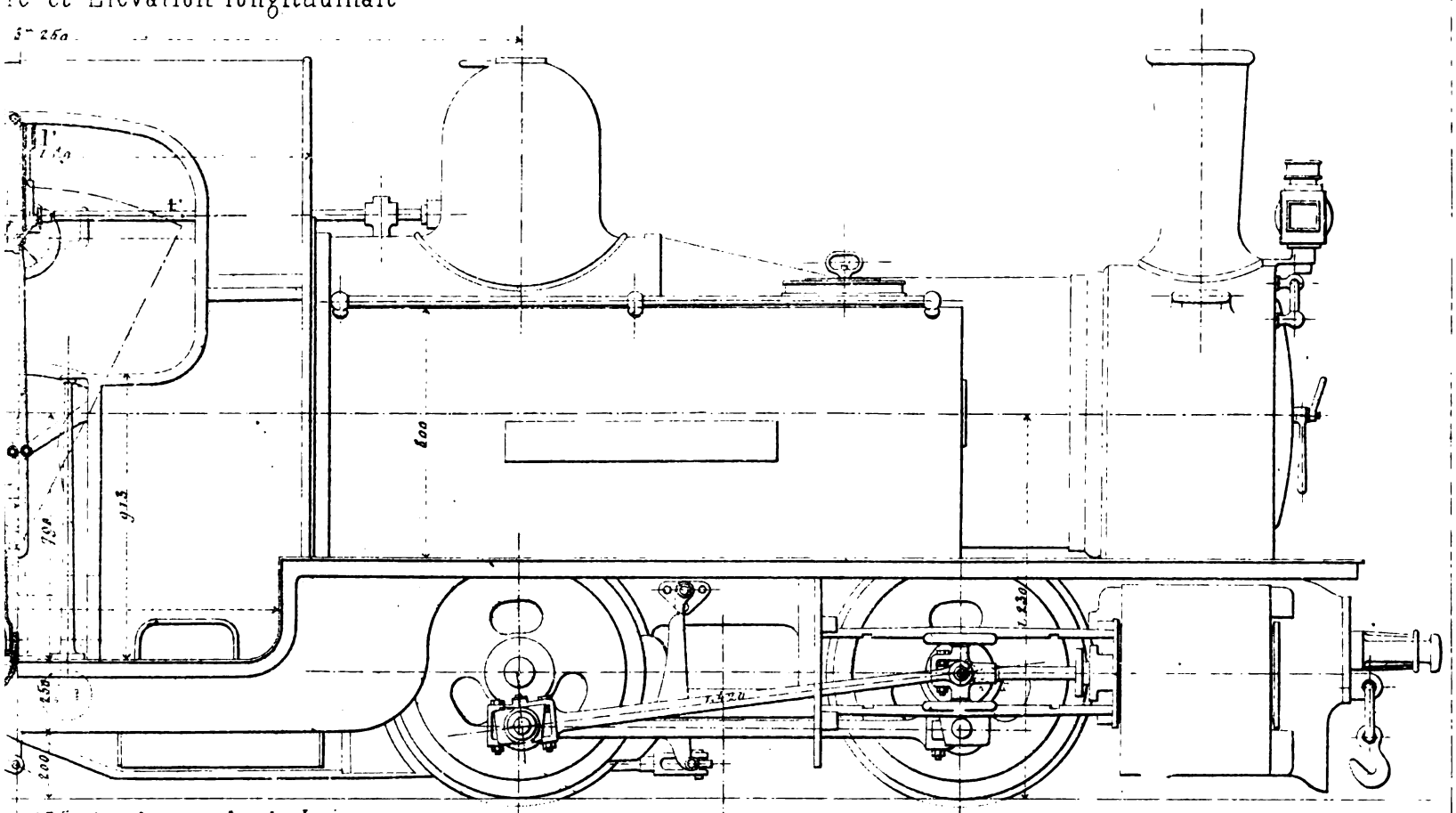


Fig.3. Coupe transversale par l'axe de l'échappement

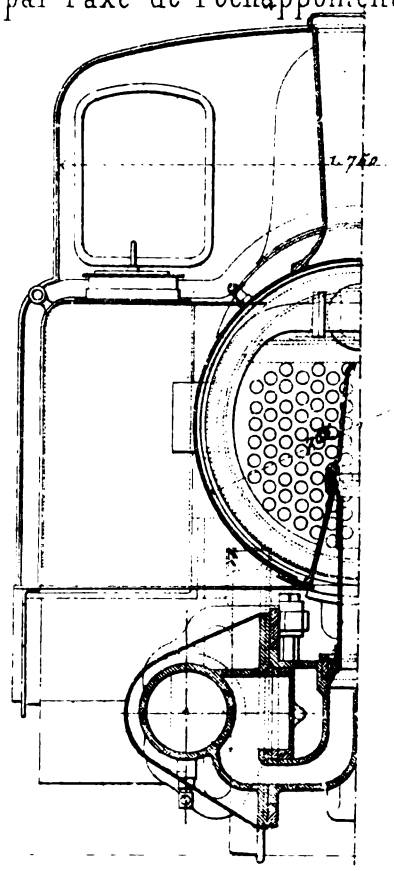
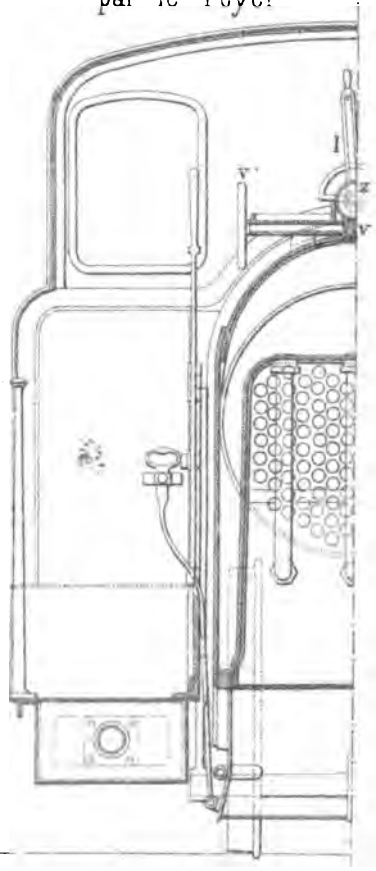
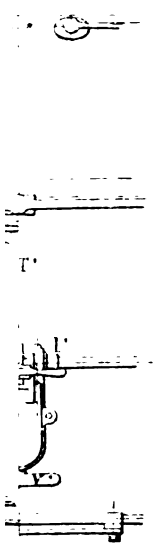


Fig.4. Coupe transversale par le foyer





(3761 9 80) Aut Imp A Broise & Courtier, 43, R de Dunkerque, Paris

LOCOMOTIVE COMPOUND de Mr WEBB. (Modèle .

Fig

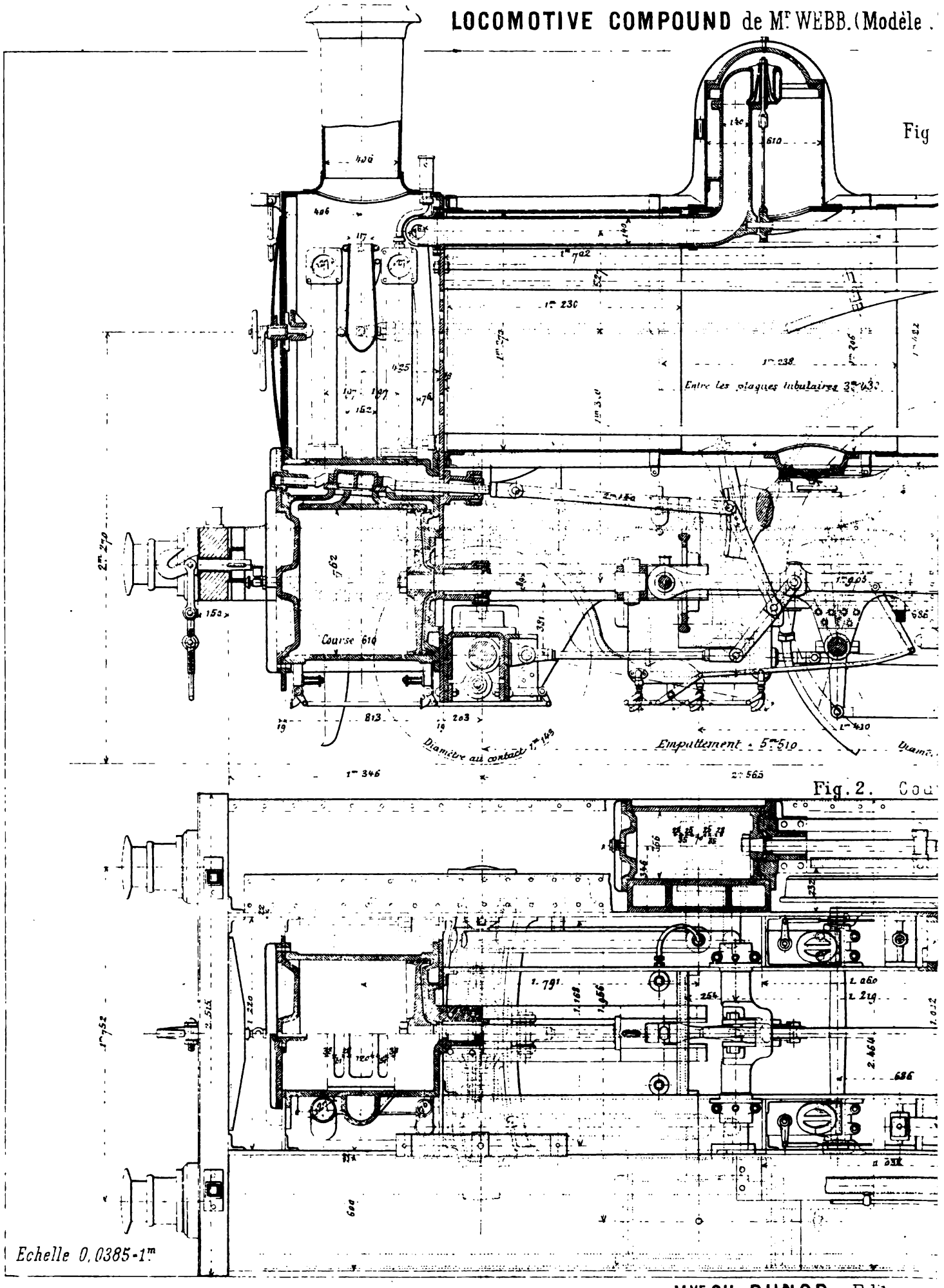


Fig. 2. Cou

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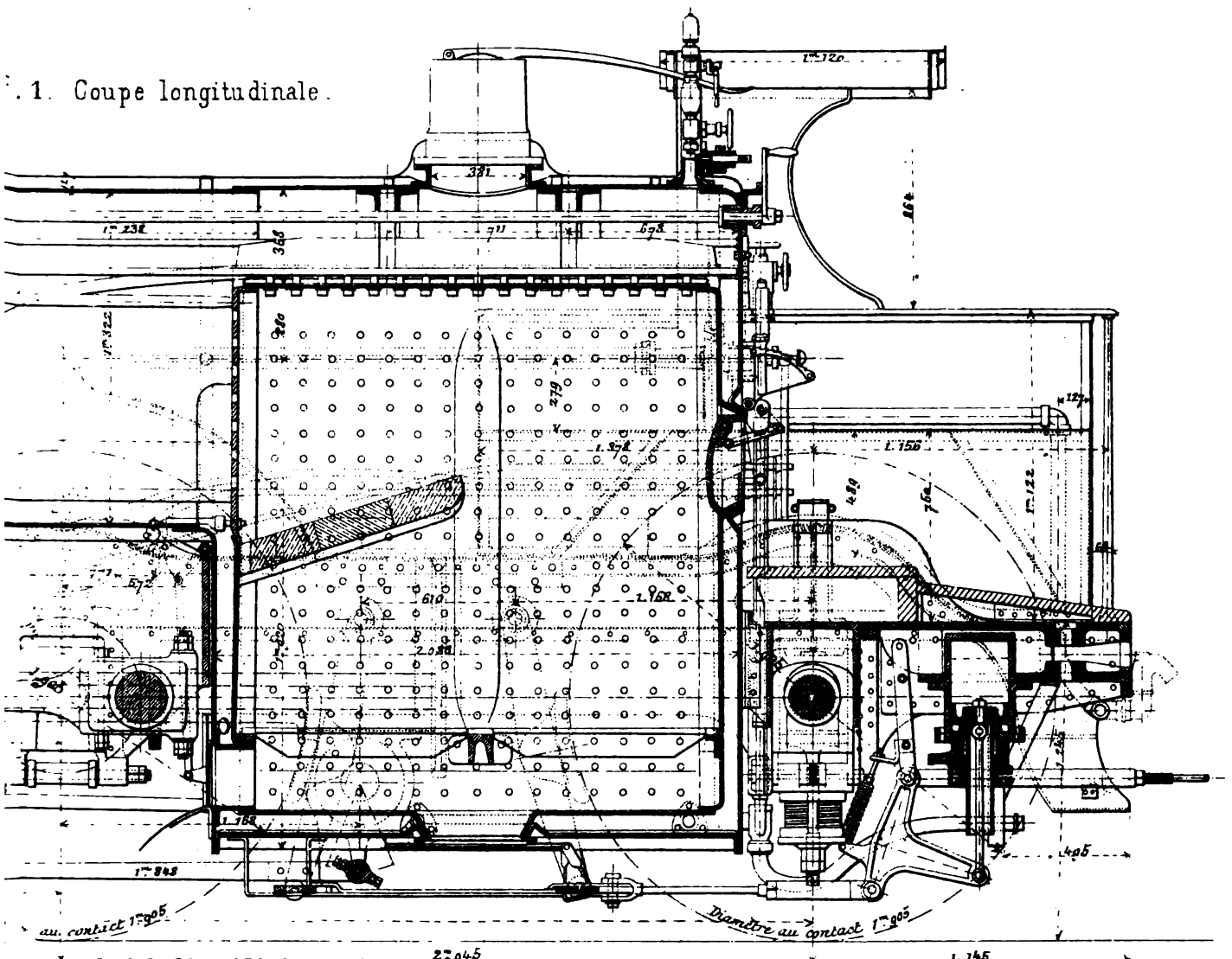
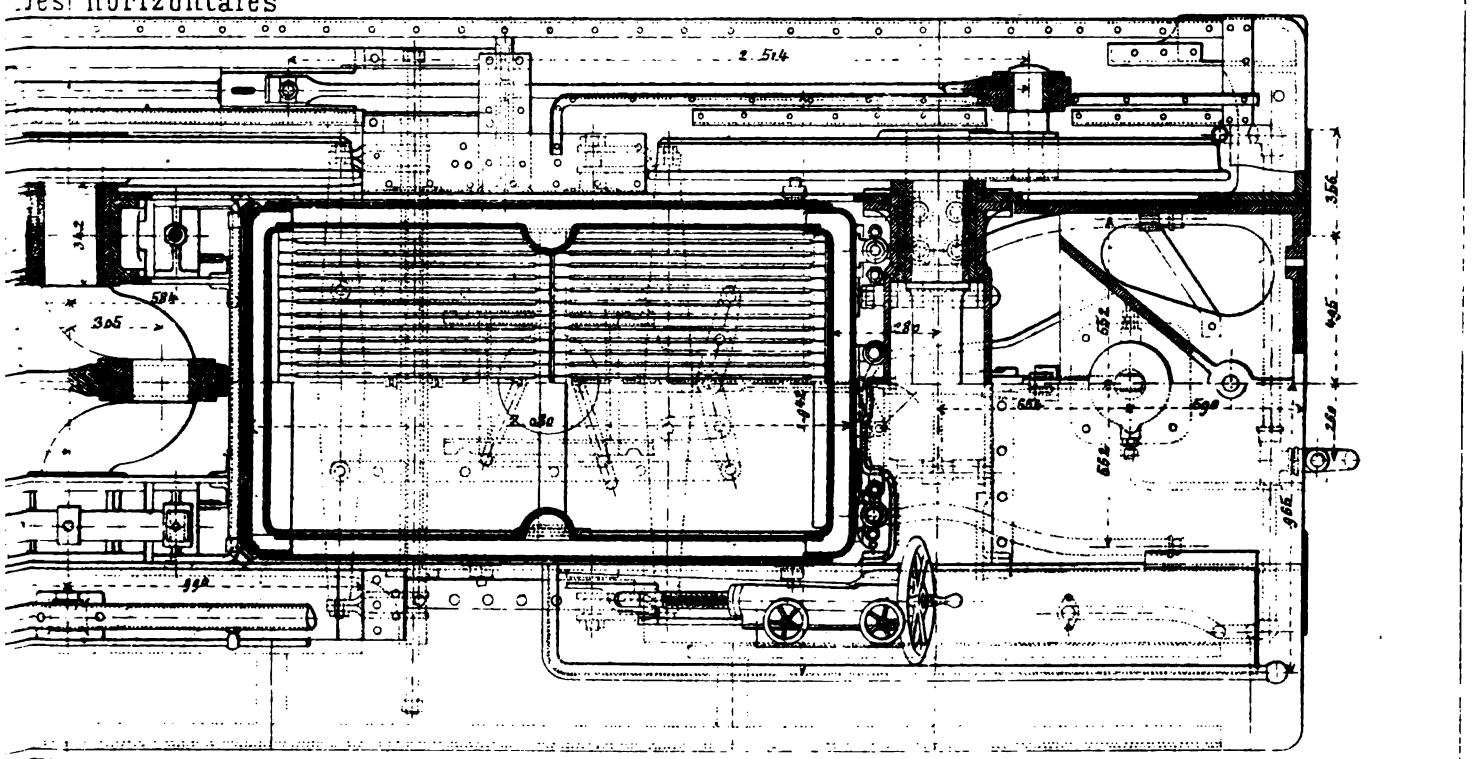


oes horizontales



Auto. Jmp. A. Broise & Courtier, 43, r. de Dunkerque.

LOCOMOTIVE COMPOUND de Mr WEBB. (Modèle

Fig

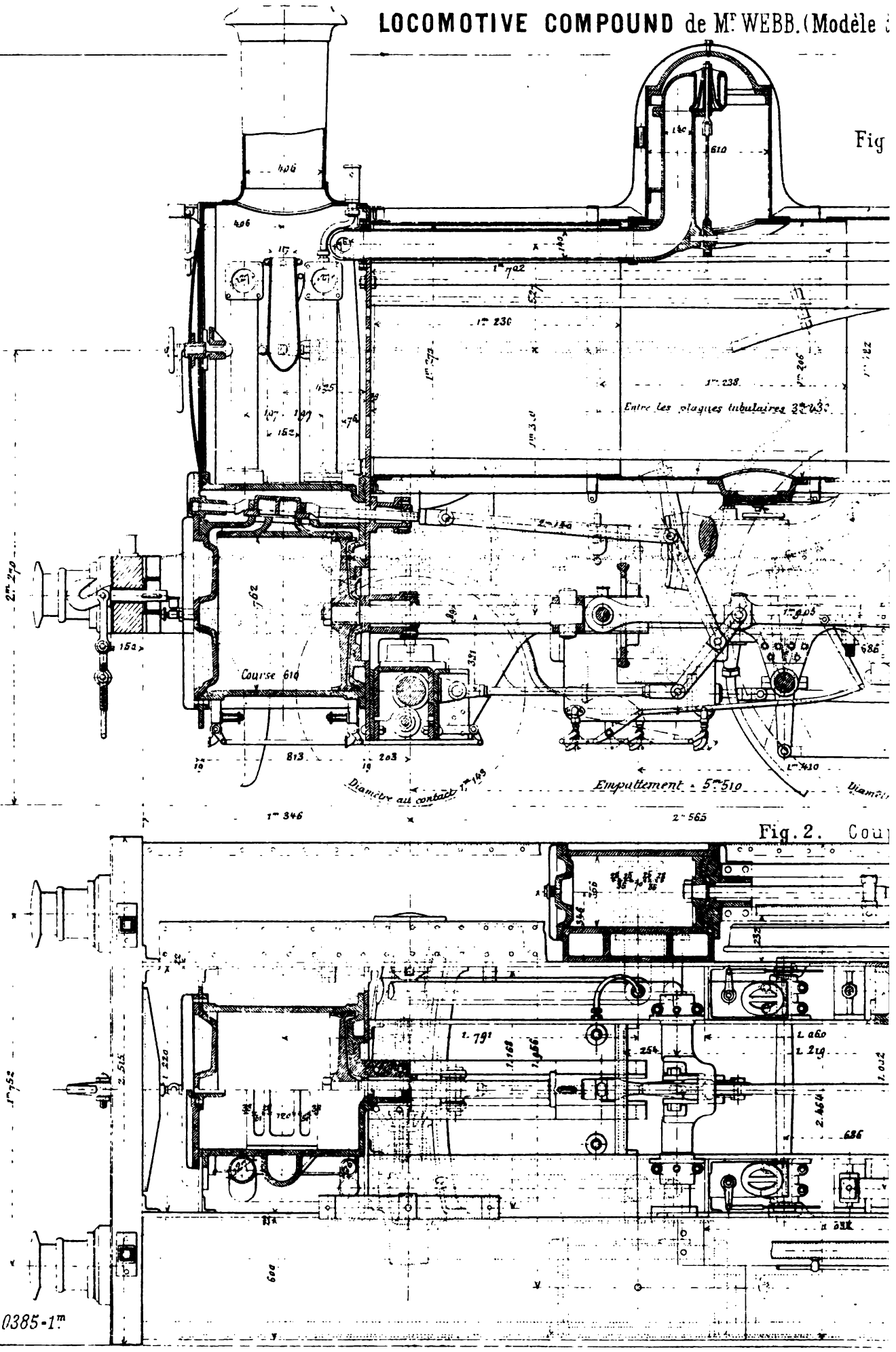
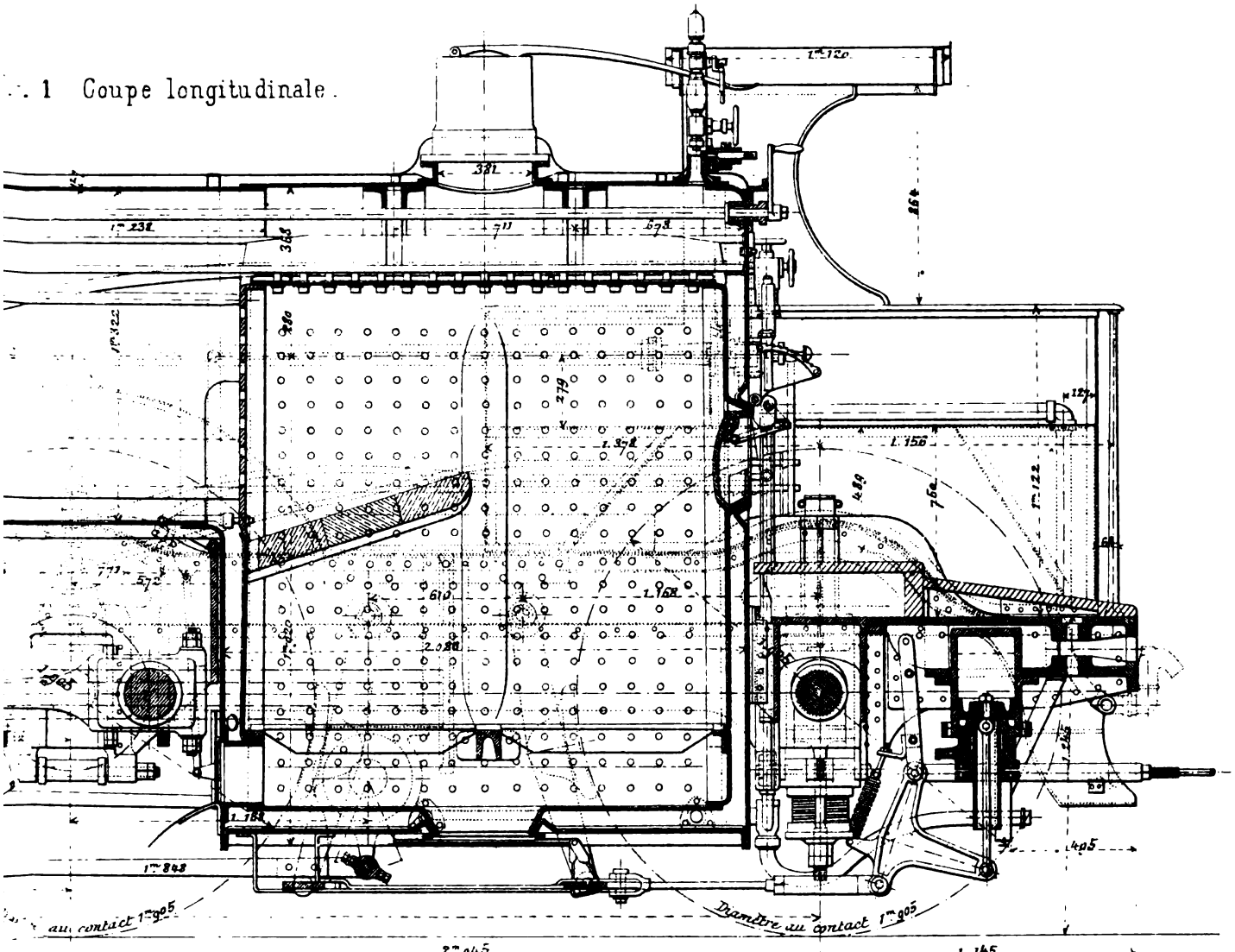
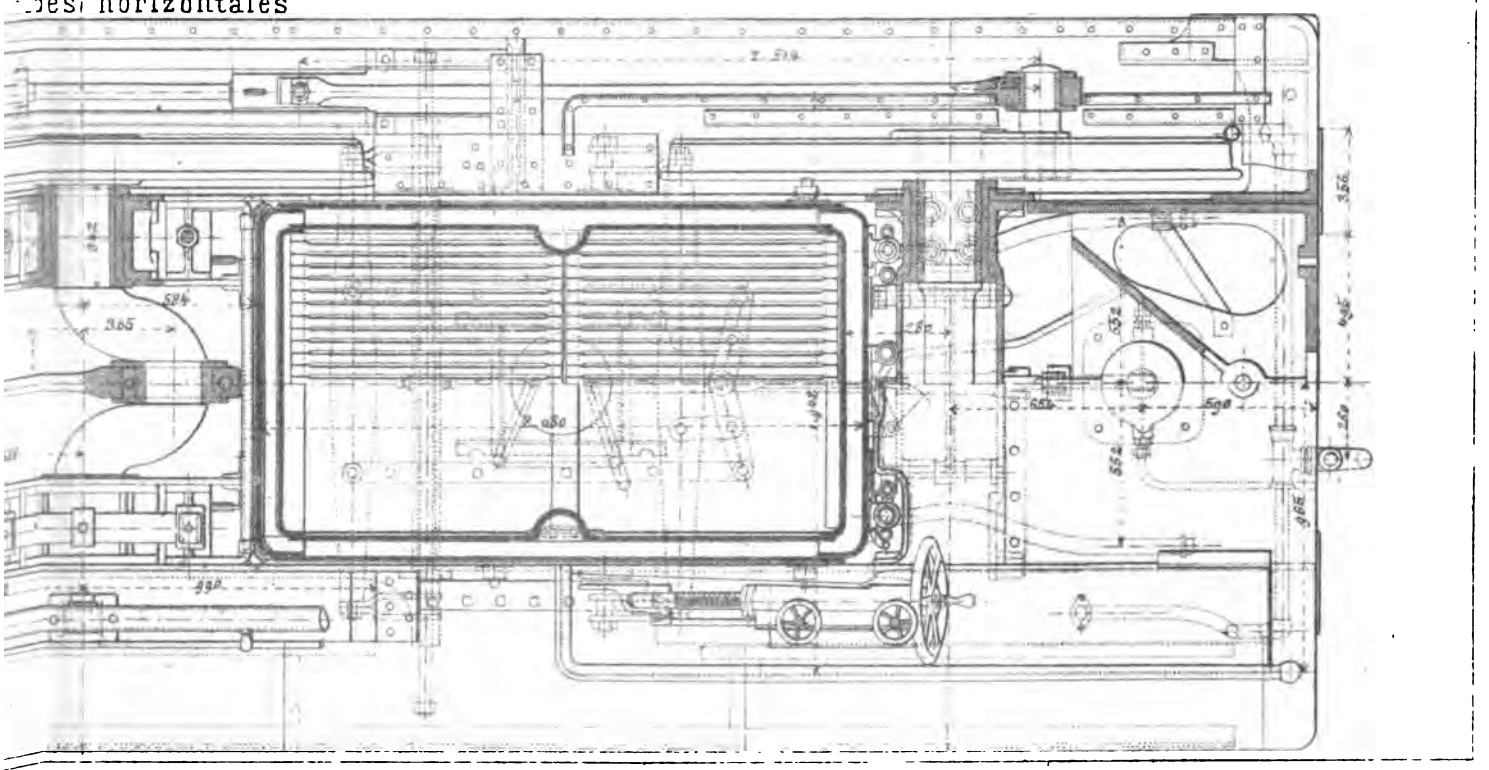


Fig. 2. Cou

. 1 Coupe longitudinale.

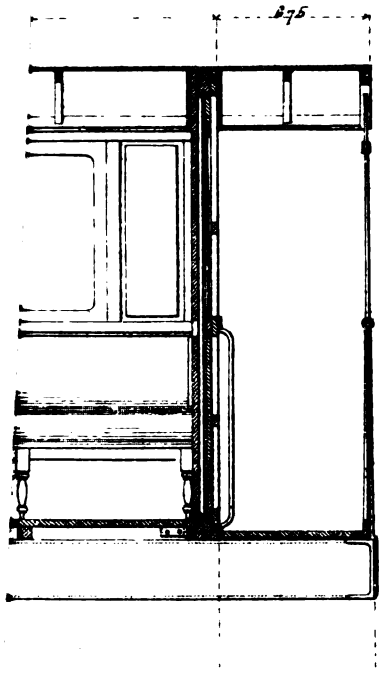


bes horizontales



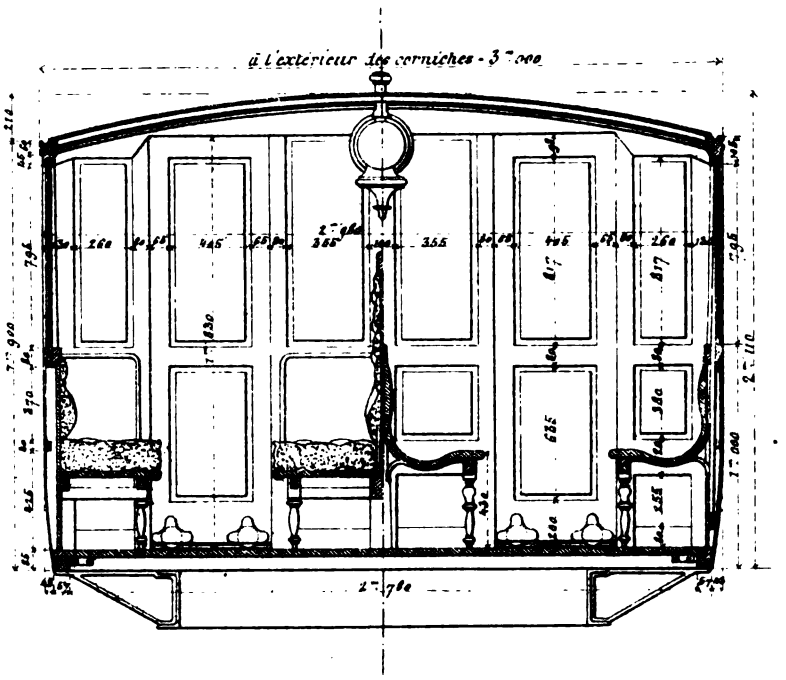
Auto. Imp. A. Broise & Courtier, 43, r. de Dunkerque.

Coupe par la 1ère Classe.

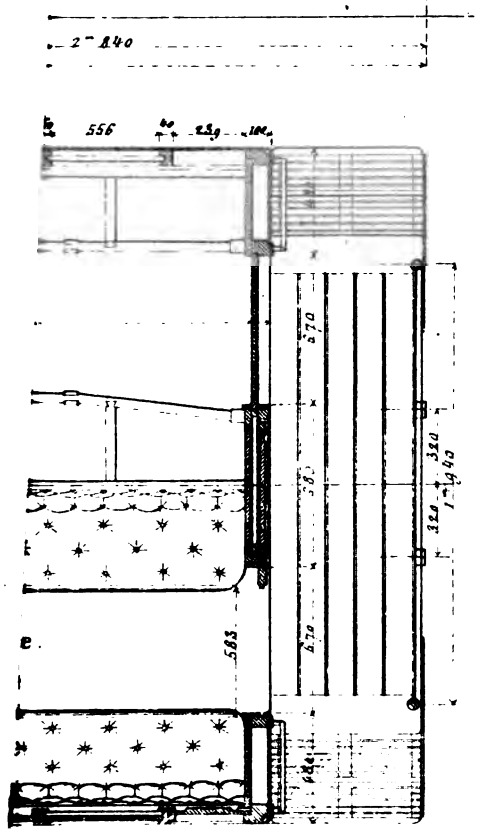


Coupe par la 3ème Classe

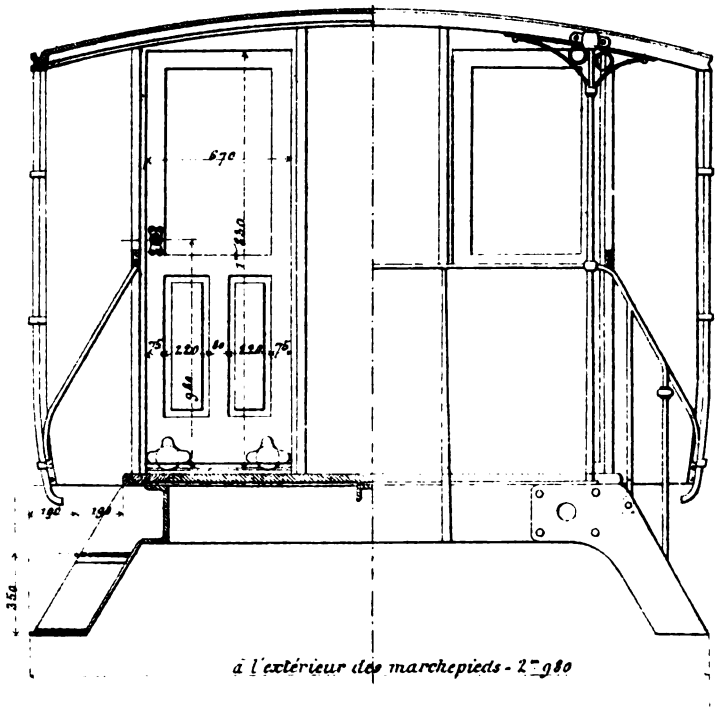
Vue intérieure d'une séparation



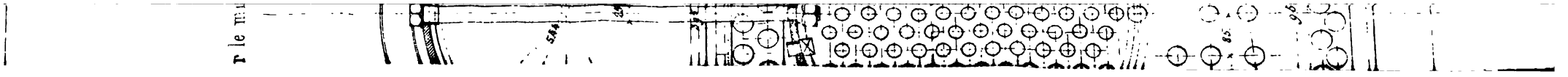
Coupe par la plate-forme du bout.



Vue par bout.

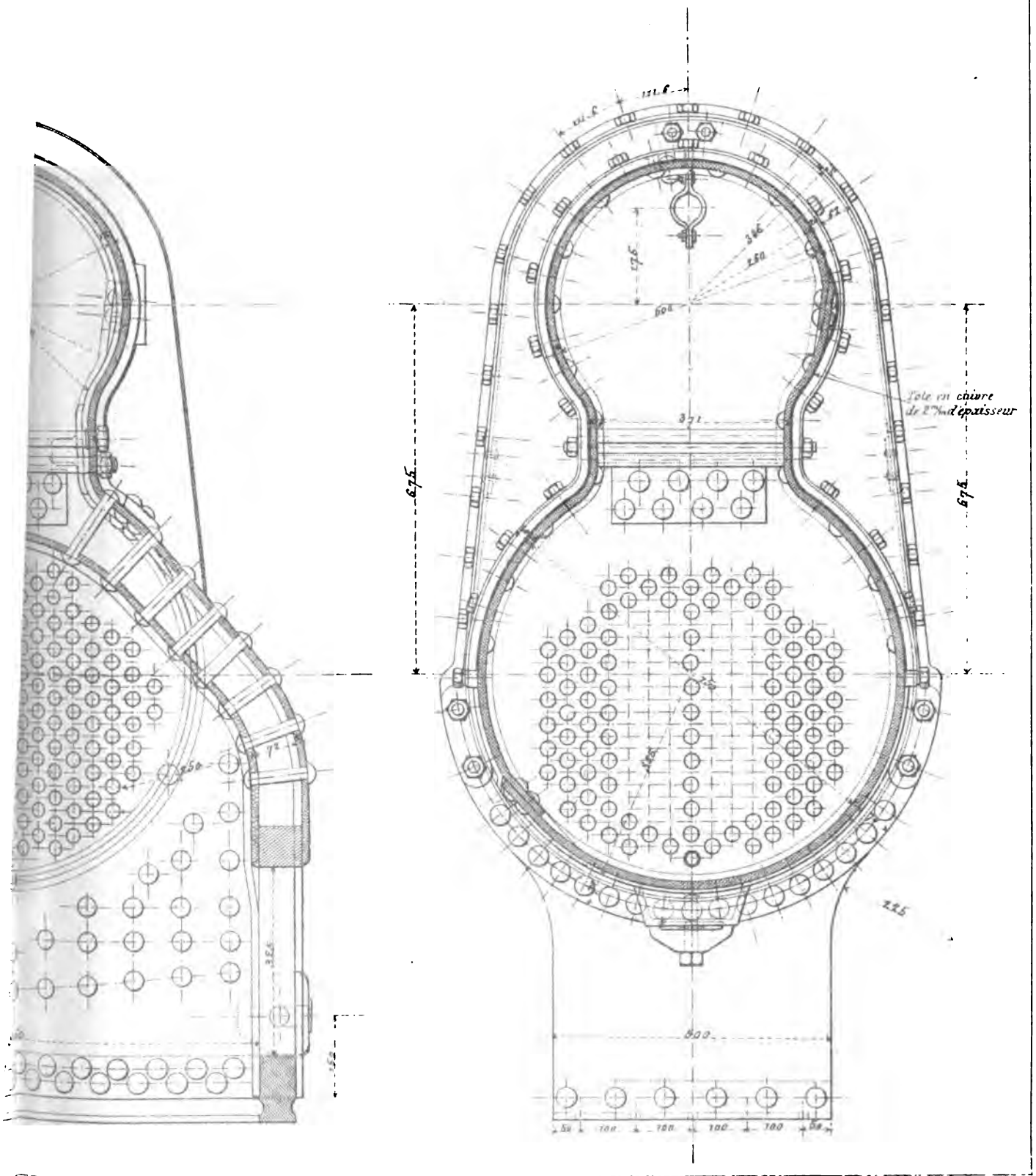


(1038 b 81) Aut. Imp. A. Broise & Courtier 43 R. de Dunkerque Paris



du foyer.

Coupe par le corps cylindrique.



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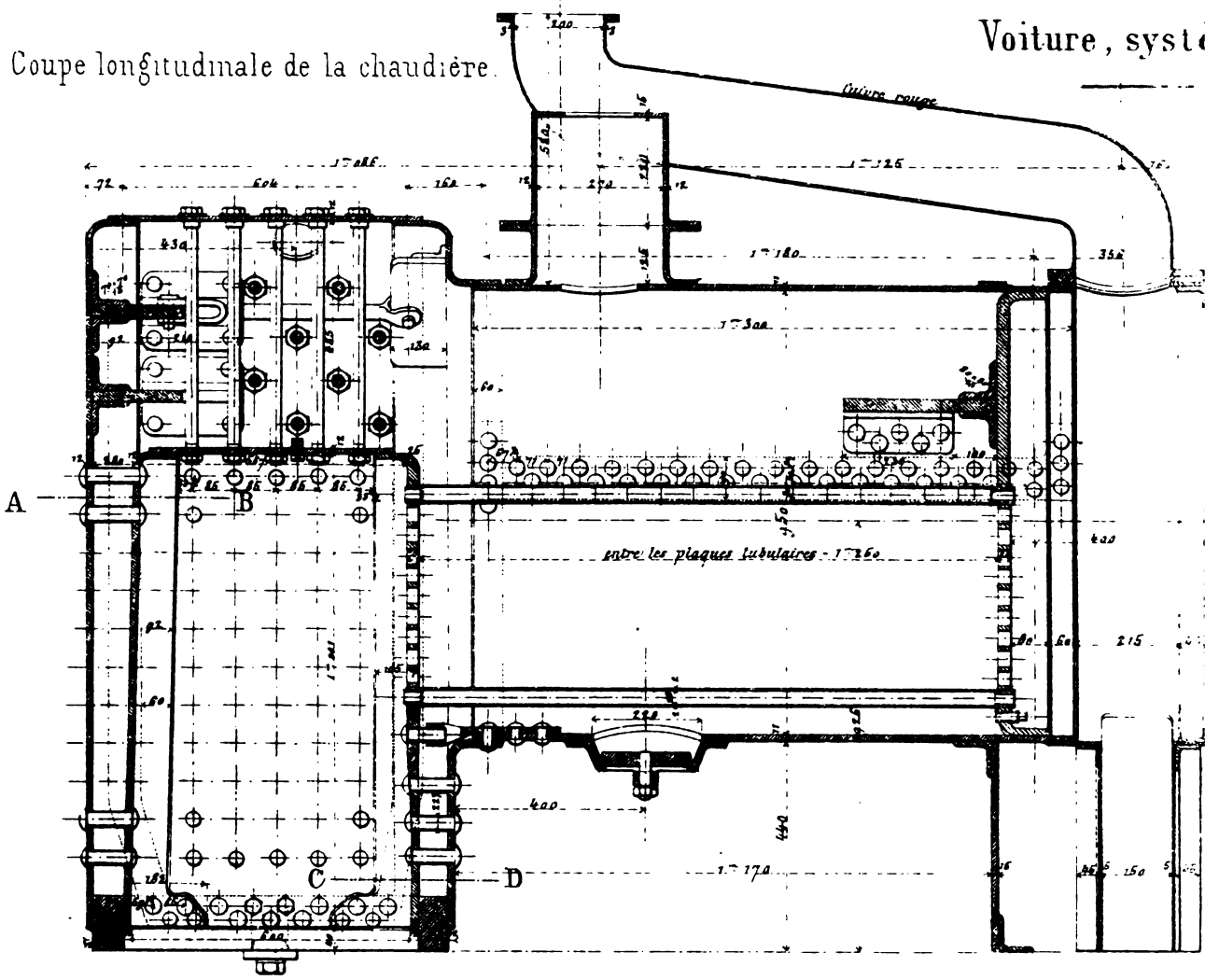
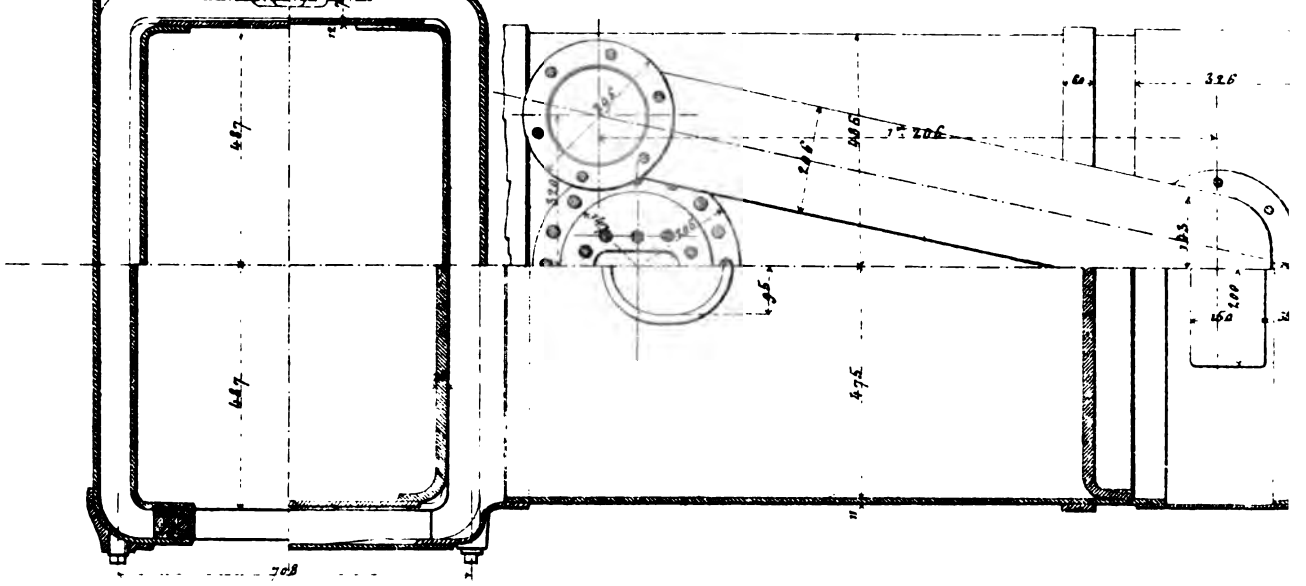
Coupe longitudinale de la chaudière.



Coupe AB.

Coupe CD.



Coupe EF.

Coupe GH.

'me **Belpaire**.

Nouvelle chaudière.
Echelle 1/15e

Coupe du corps cylindrique. | Coupe de la boîte à feu.

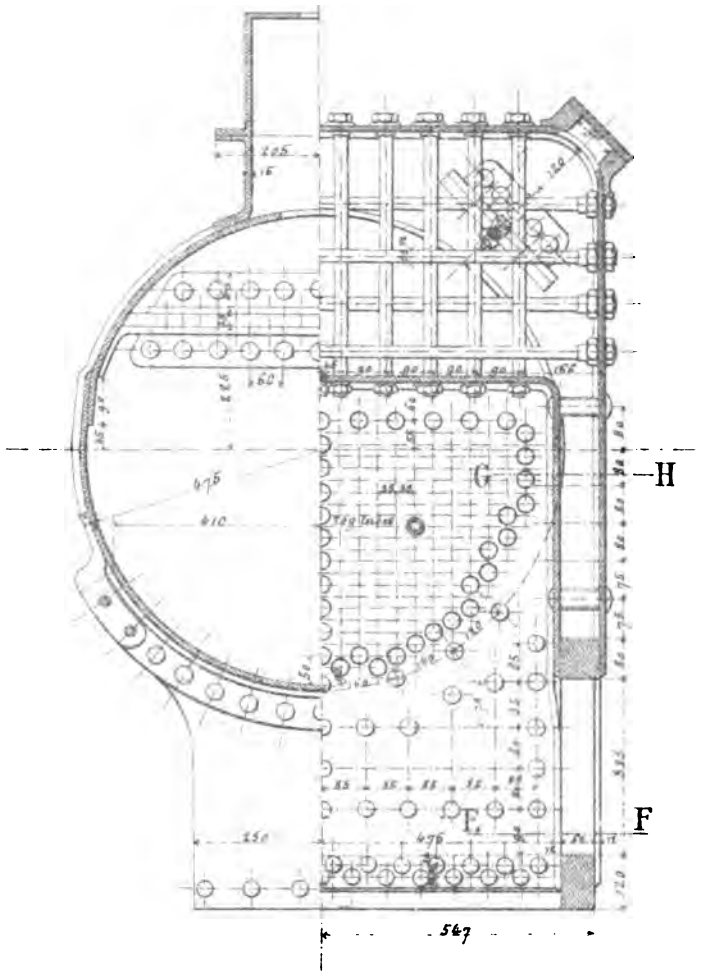
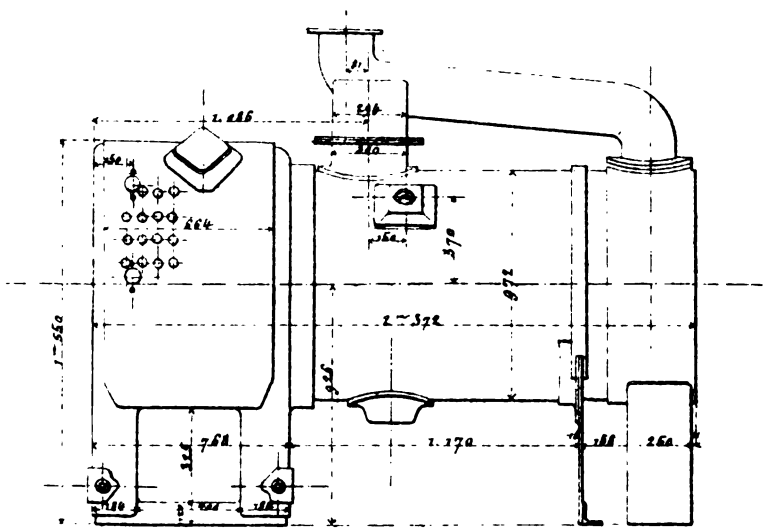


Diagramme. *(Echelle 1/30e)*



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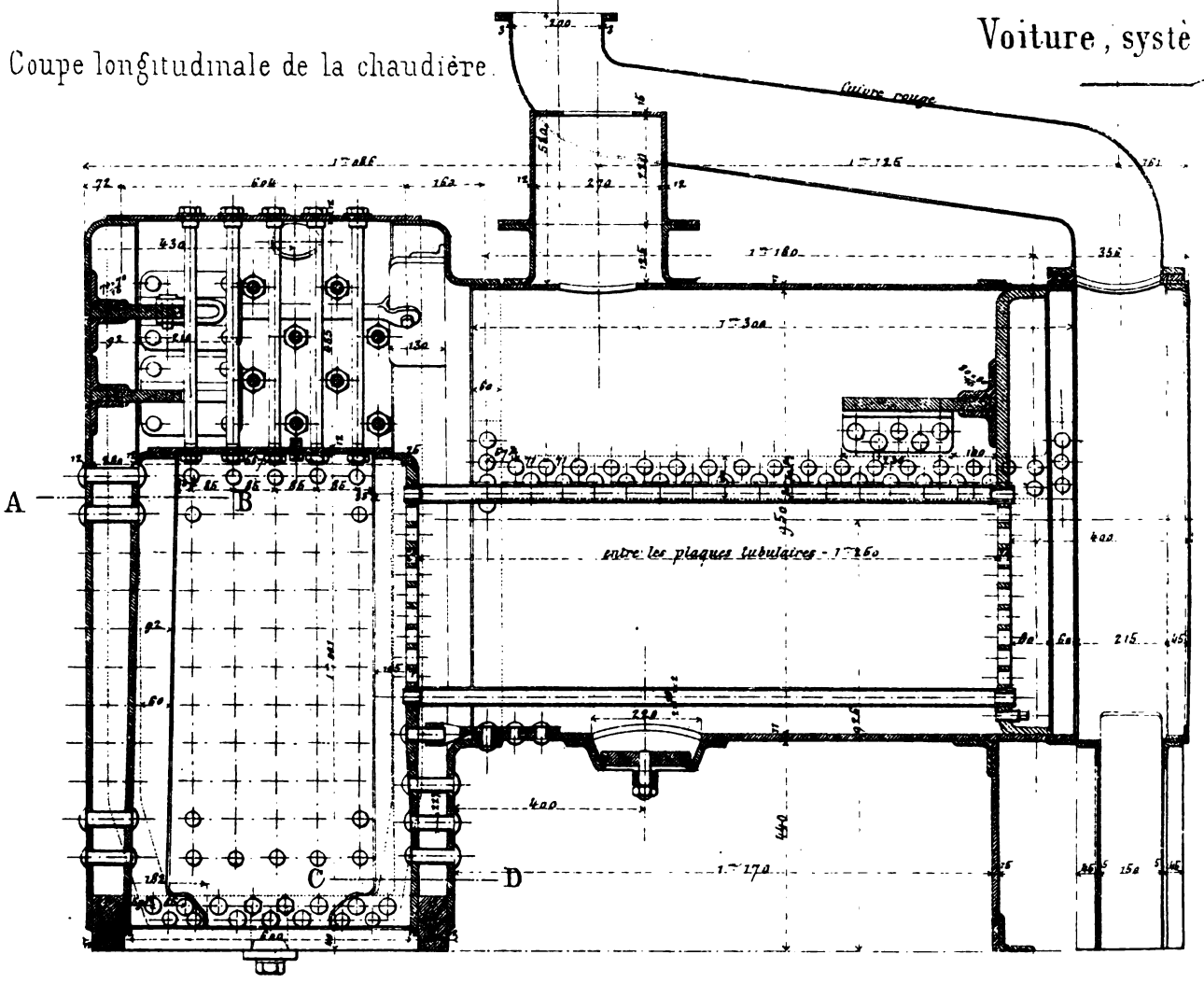
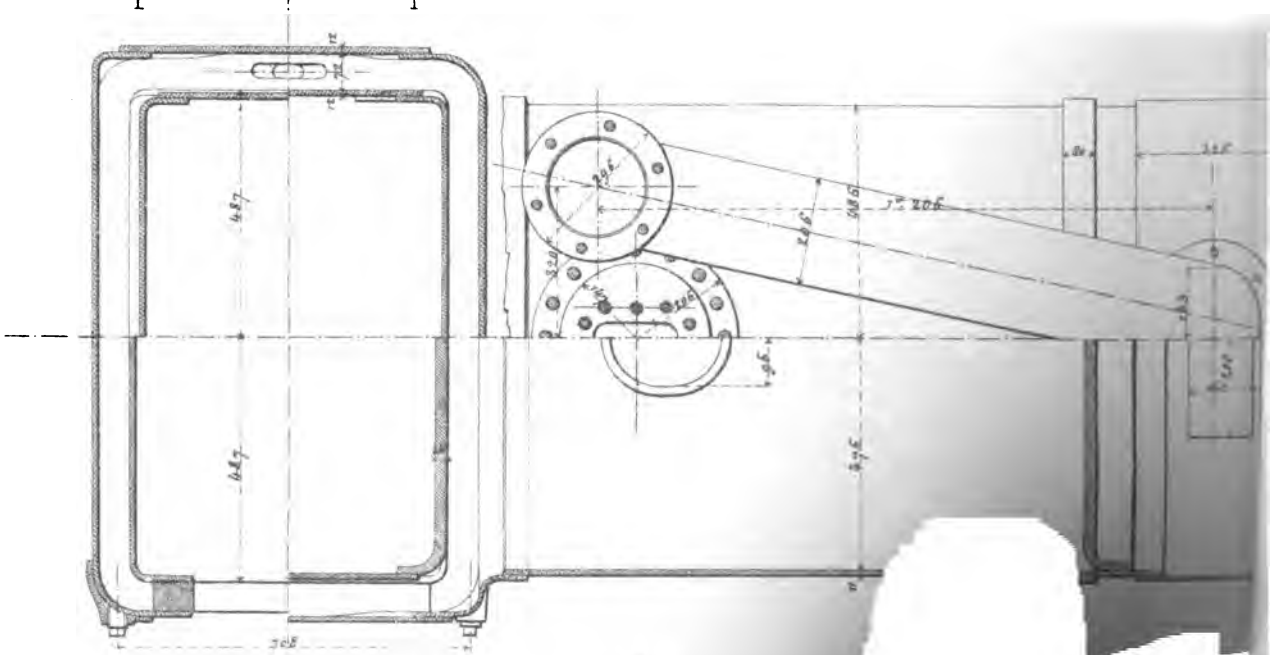
Voiture, systè

Coupe longitudinale de la chaudière.



Coupe AB.

Coupe CD.

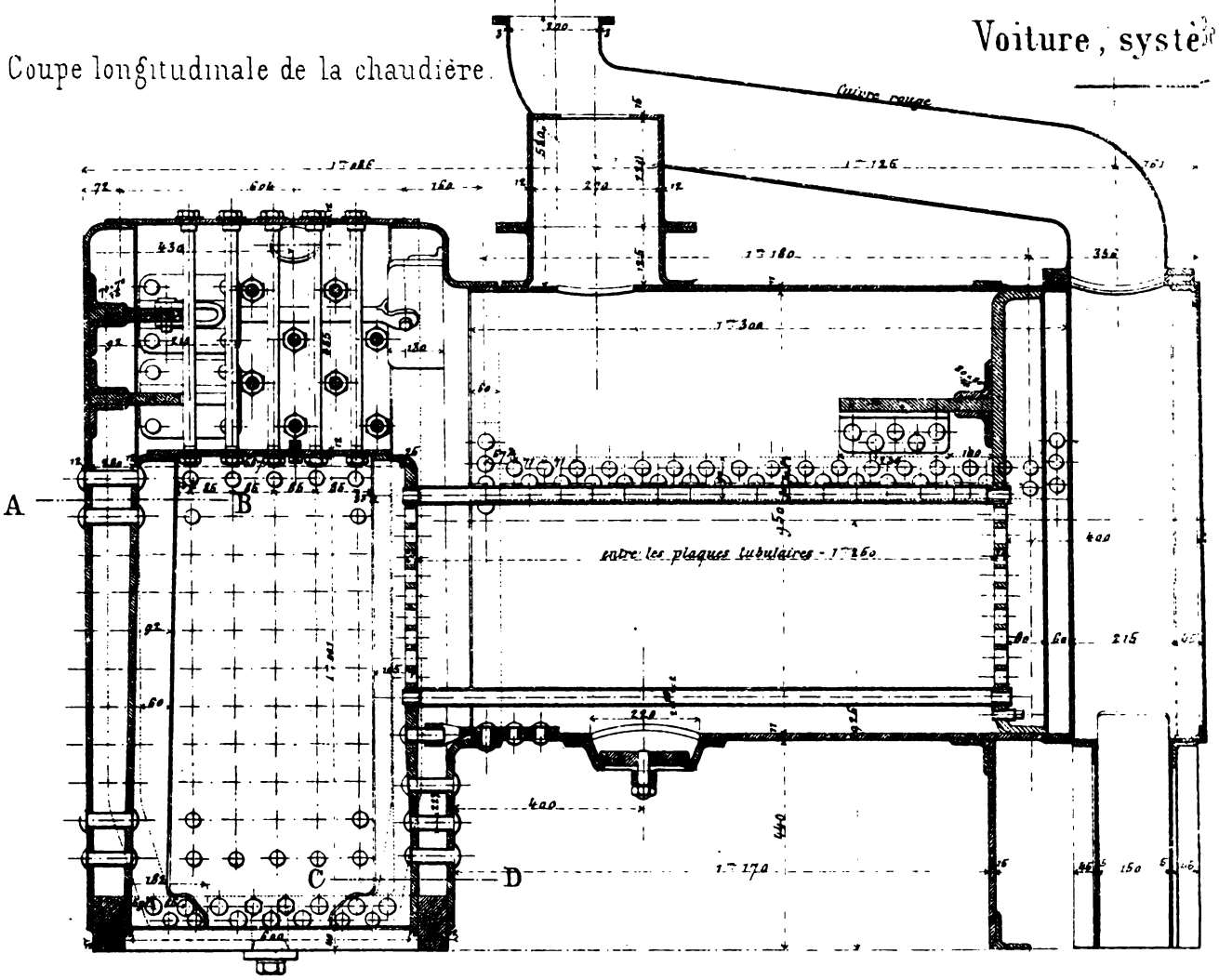


Coupe EF.

Coupe GH.

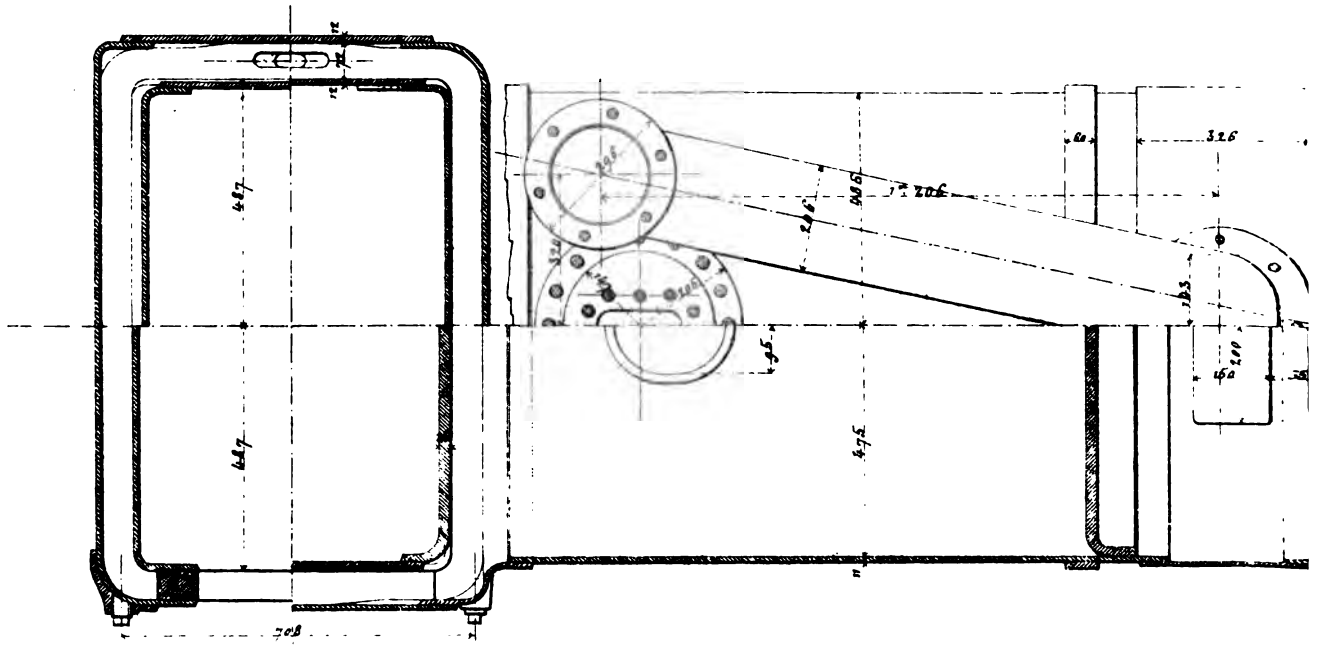
Voiture, syste

Coupe longitudinale de la chaudière.



Coupe AB.

Coupe CD.



Coupe EF.

Coupe GH.

ème **Belpaire**.

Nouvelle chaudière.

Echelle 1/15e

Coupe du corps cylindrique. | Coupe de la boîte à feu.

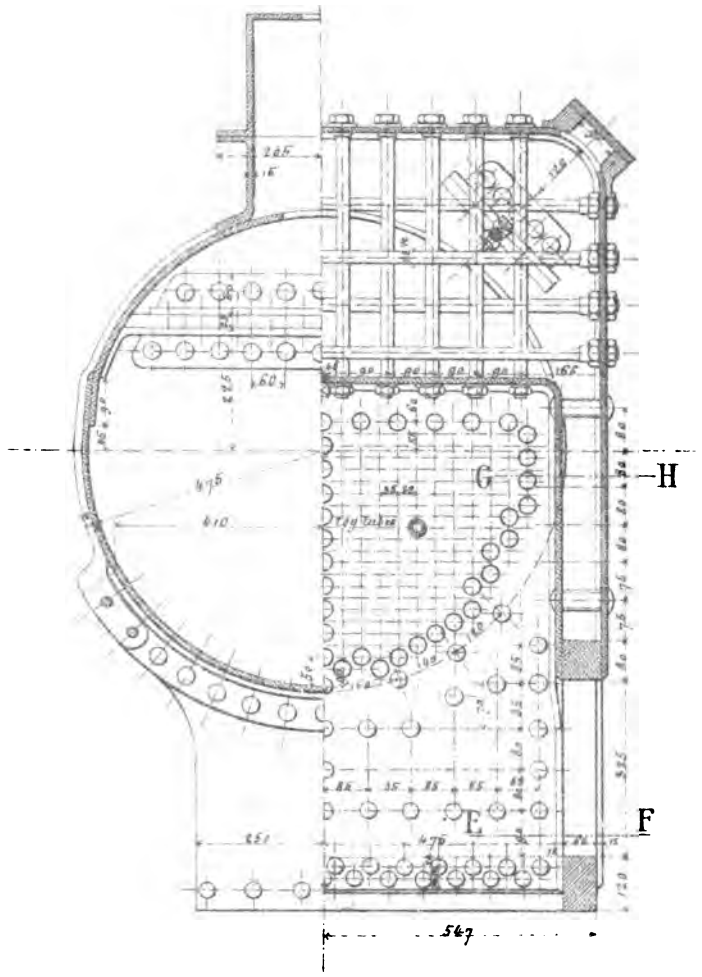
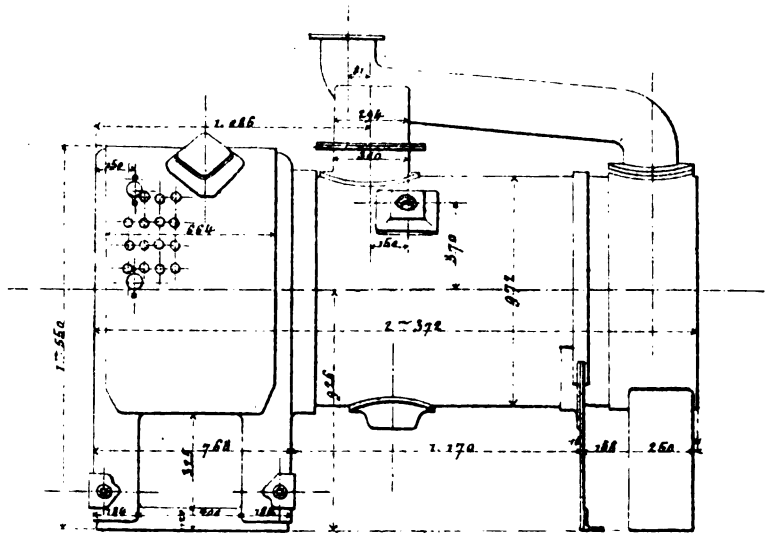


Diagramme. *(Echelle 1/30e)*



(1000 ex.) Aut. Imp. A. Broise & Courtier, 49, R. de Dunkerque, Paris

Fig. 1 à 10, Clefs à tubes.

Fig. 1. S.P. Lathrop.

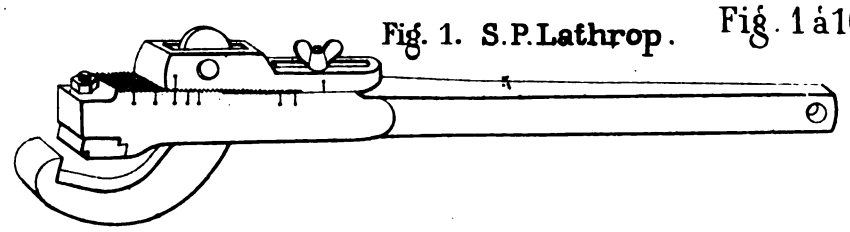


Fig. 5. Cha

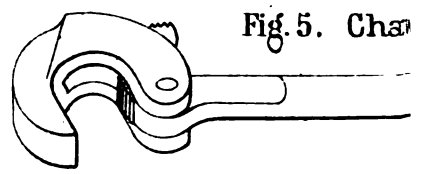


Fig. 3. Browing

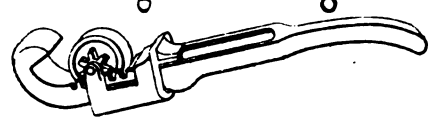


Fig. 6. Ch

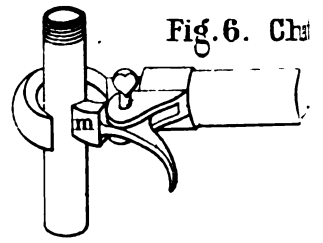


Fig. 2. Benley.

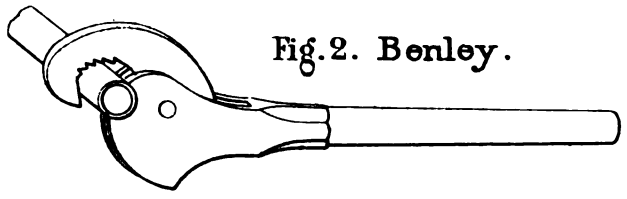


Fig. 4. Coleman.

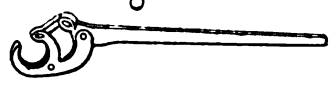


Fig. 6(a)

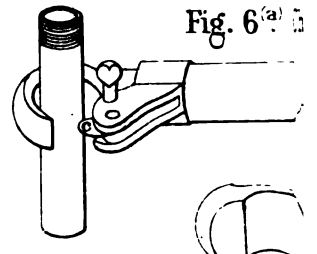


Fig. 8. Brown

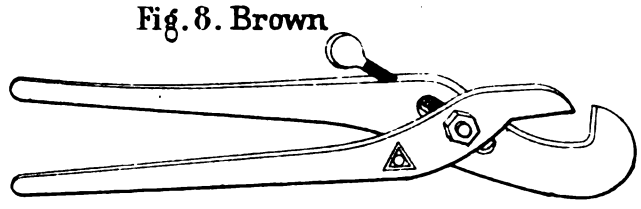
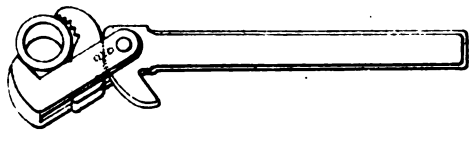


Fig. 9. Comber



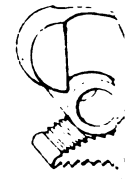


Fig. 10. C. Warsop.

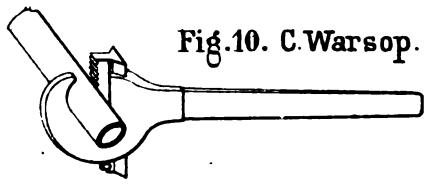
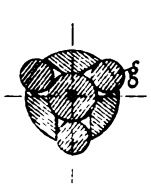


Fig. 11. Boyer et Lavalette.



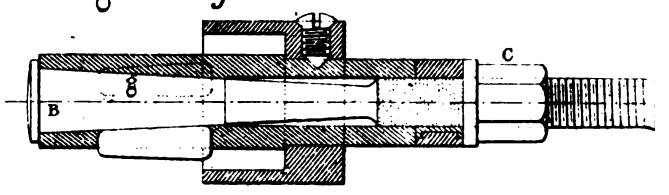


Fig. 12. Dudgeon.

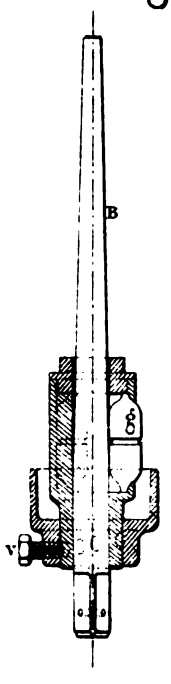


Fig. 13. Thorburn.

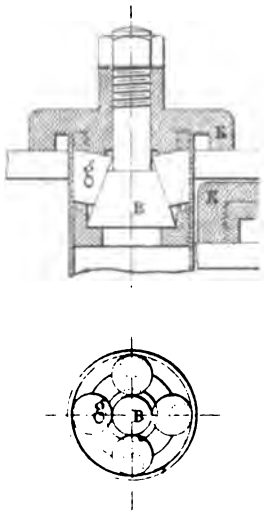


Fig. 14.

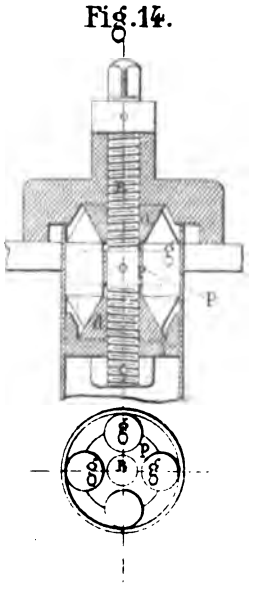
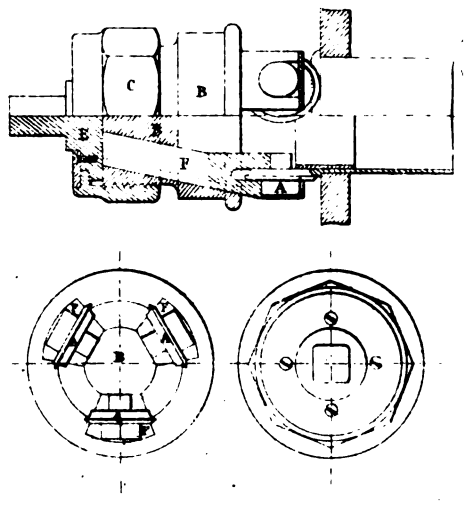


Fig. 15. Jouffret.



twin.

atwin.

Chatwin.

Fig.7. Philips.

Mandrineurs (Fig.11 à 32)

Fig.16.

Fig.17. Coupe yy.

Fig. 16 à 19. Mandrineur, **Tully**.

Fig.18.

Fig.19.

Fig.20. **Miller**

Fig.21. **Bushor.**

Dudgeon.

Appareil à mandriner les tubes de 055.
(Nord)

Fig.22.

Fig.23.

Fig.24.

Fig.25.

Fig.26.

Fig.27.

Fig.28.

Fig.29.

Fig.30.

Fig.31.

Fig.32.

3856.

Auto.-Imp. A. Broise & Courtier, 43, rue de Dunkerque, Paris.

Fig. 1 à 10, Clefs à tubes.

Fig. 1. S.P.Lathrop.

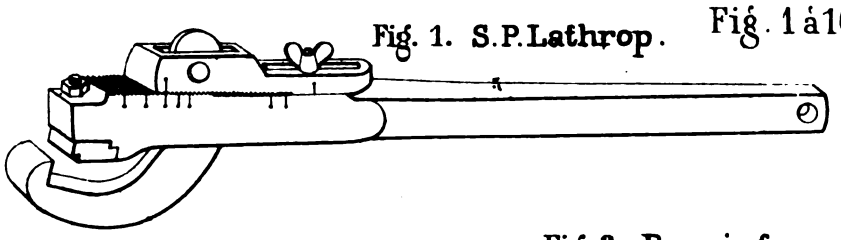


Fig. 5. Cha

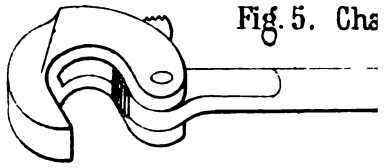


Fig. 3. Browing

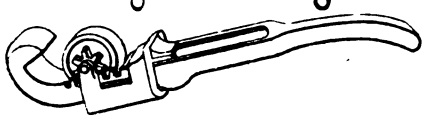


Fig. 6. Ch

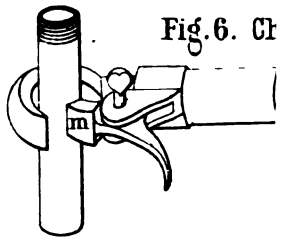


Fig. 2. Benley.

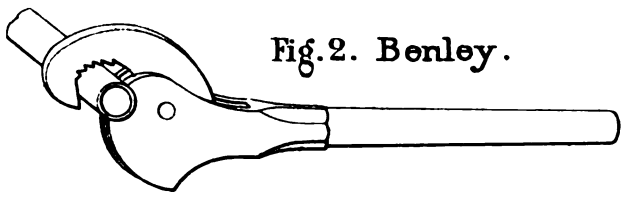


Fig. 4. Coleman.

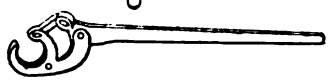


Fig. 6ª

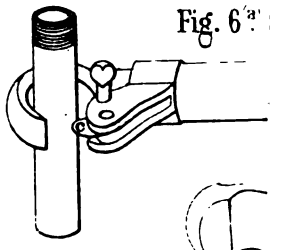


Fig. 8. Brown

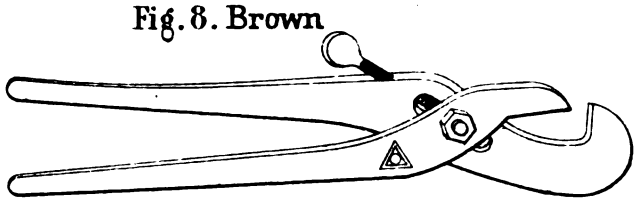
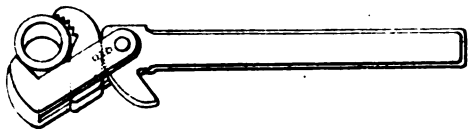


Fig. 9. Comber



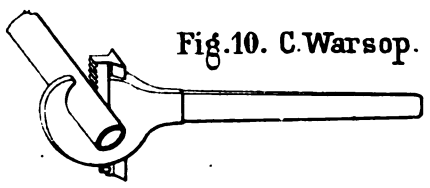


Fig. 10. C. Warsop.

Fig. 11. Boyer et Lavalette.

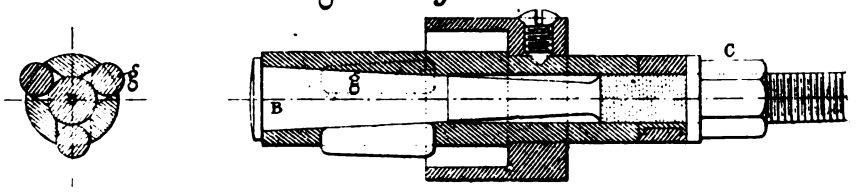


Fig. 12. Dudgeon.

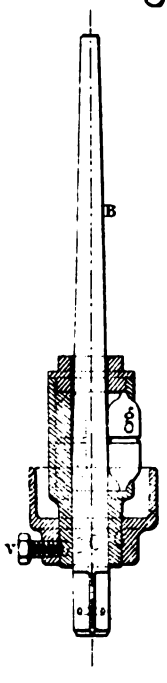


Fig. 13. Thorburn.

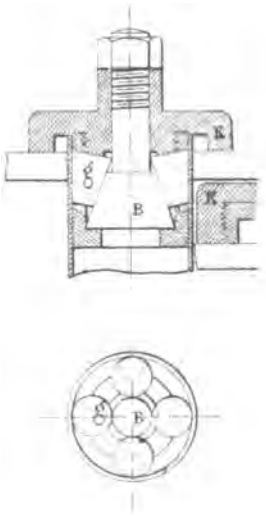


Fig. 14.

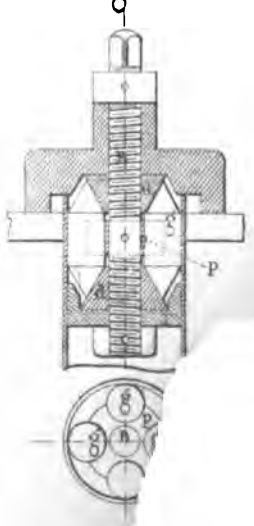


Fig. 15. Jouffret.

GE DES TUBES

Chatwin.

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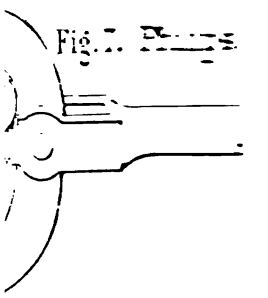


Fig. 1 à 10, **Clefs à tubes.**

Fig. 1. S.P. Lathrop.

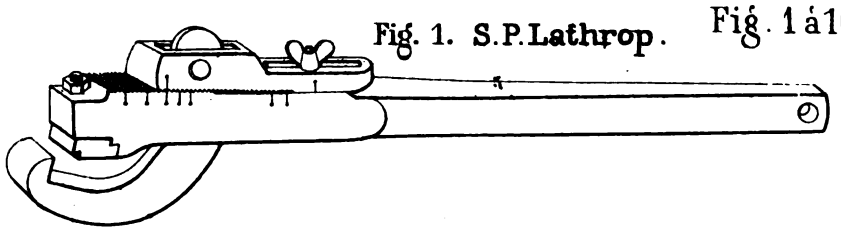


Fig. 5. Cha

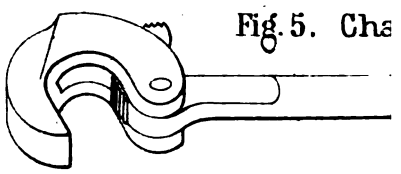


Fig. 3. Browing

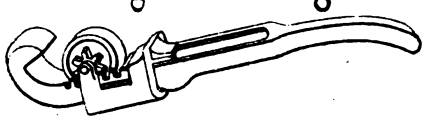


Fig. 6. Ch

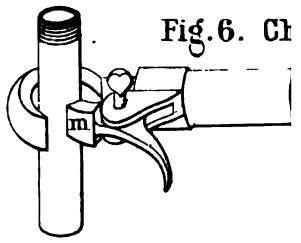


Fig. 2. Benley.

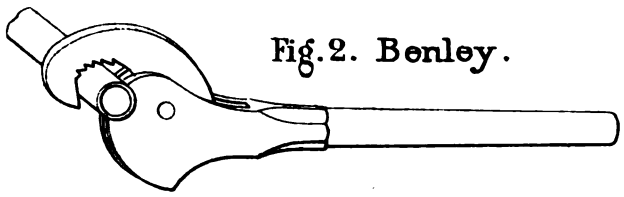


Fig. 4. Coleman.

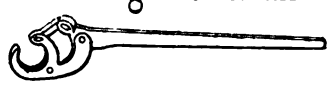


Fig. 6(a)

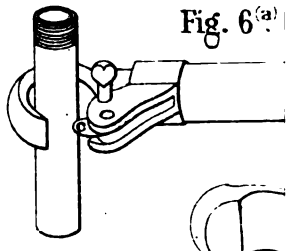


Fig. 8. Brown

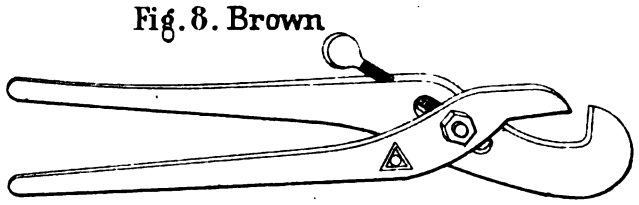
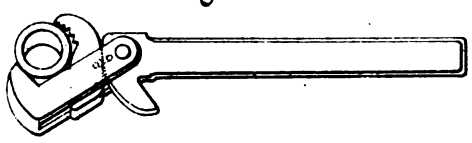


Fig. 9. Comber



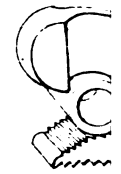


Fig. 10. C. Warsop.

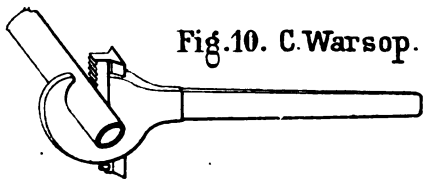
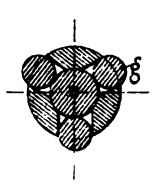


Fig. 11. Boyer et Lavalette.



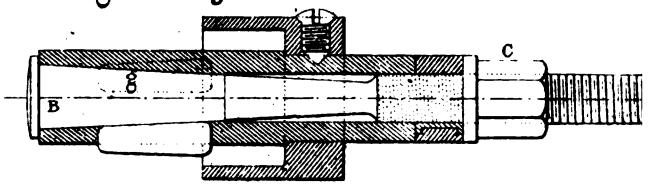


Fig. 12. Dudgeon.

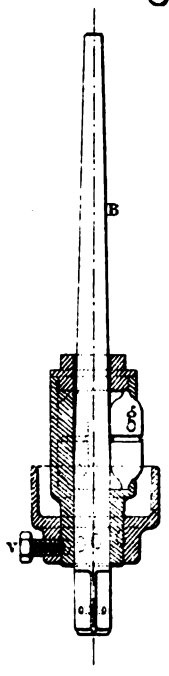
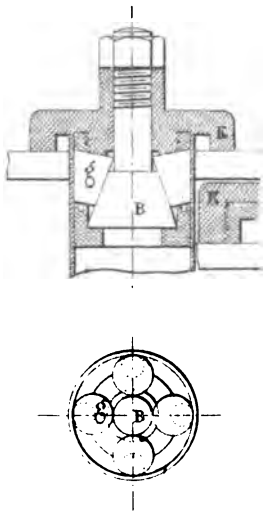


Fig. 13. Thorburn.



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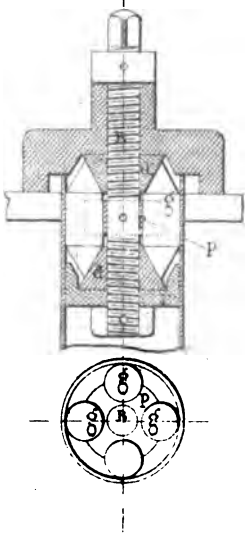
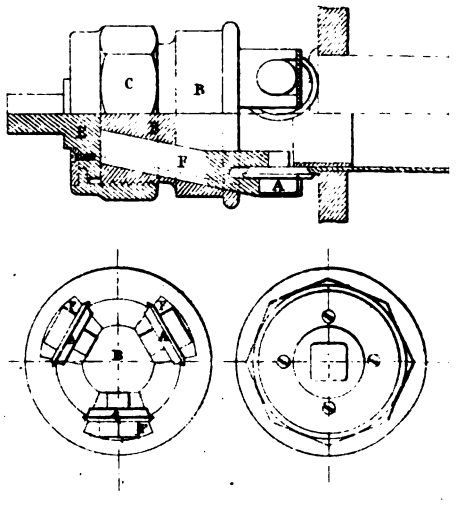
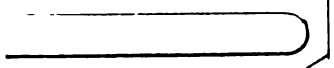


Fig. 15. Jouffret.



Mandrineurs (Fig.11 à 32)

itwin.



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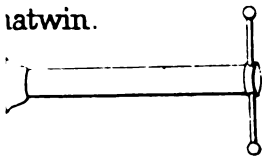


Chatwin.

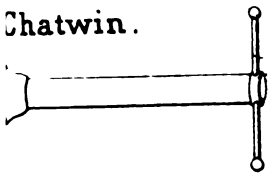


Fig.7. **Philips.**

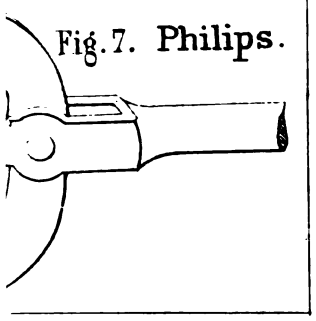


Fig.16.

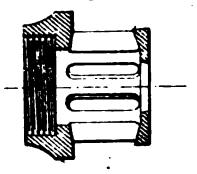


Fig.17. Coupe yy.

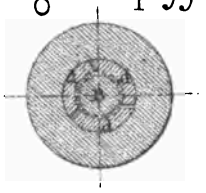


Fig. 16 à 19. Mandrineur, **Tully**.

Fig.18.

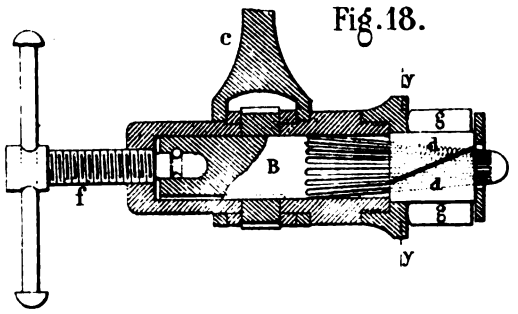


Fig.19.

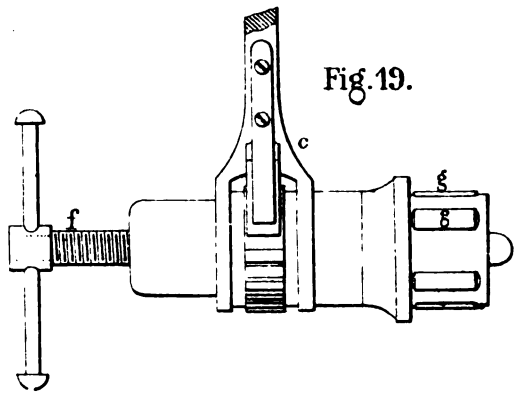


Fig.20. **Miller**

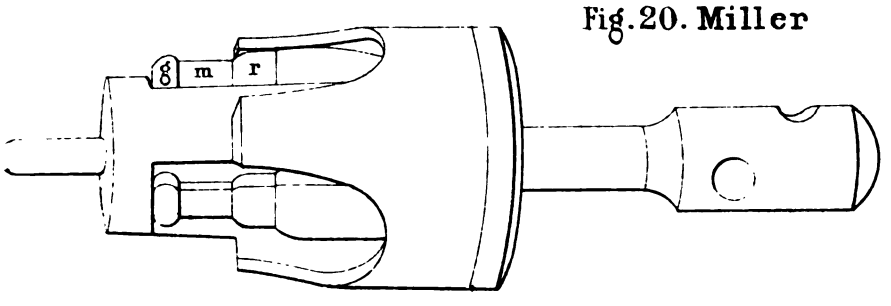
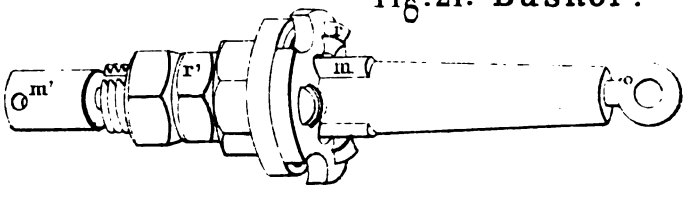
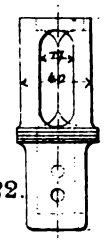


Fig.21. **Bushor.**



Dudgeon.
Appareil à mandriner les tubes de 55.
(Nord)

Fig.22.



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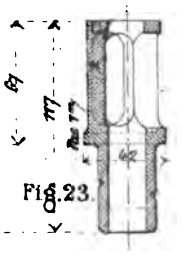

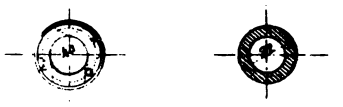

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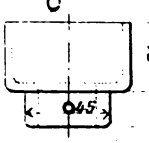

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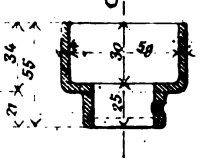

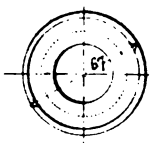

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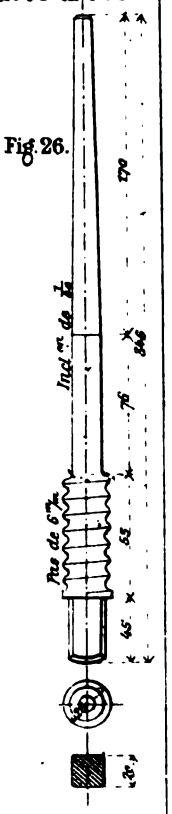

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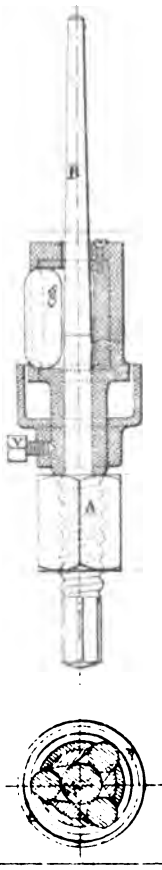

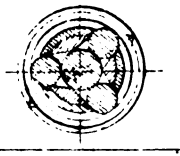

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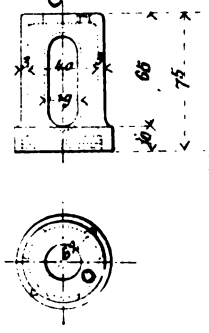

Fig.29.

Fig.30.

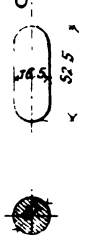

Fig.31.

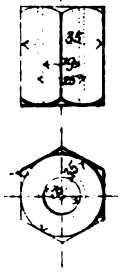

Fig.32.

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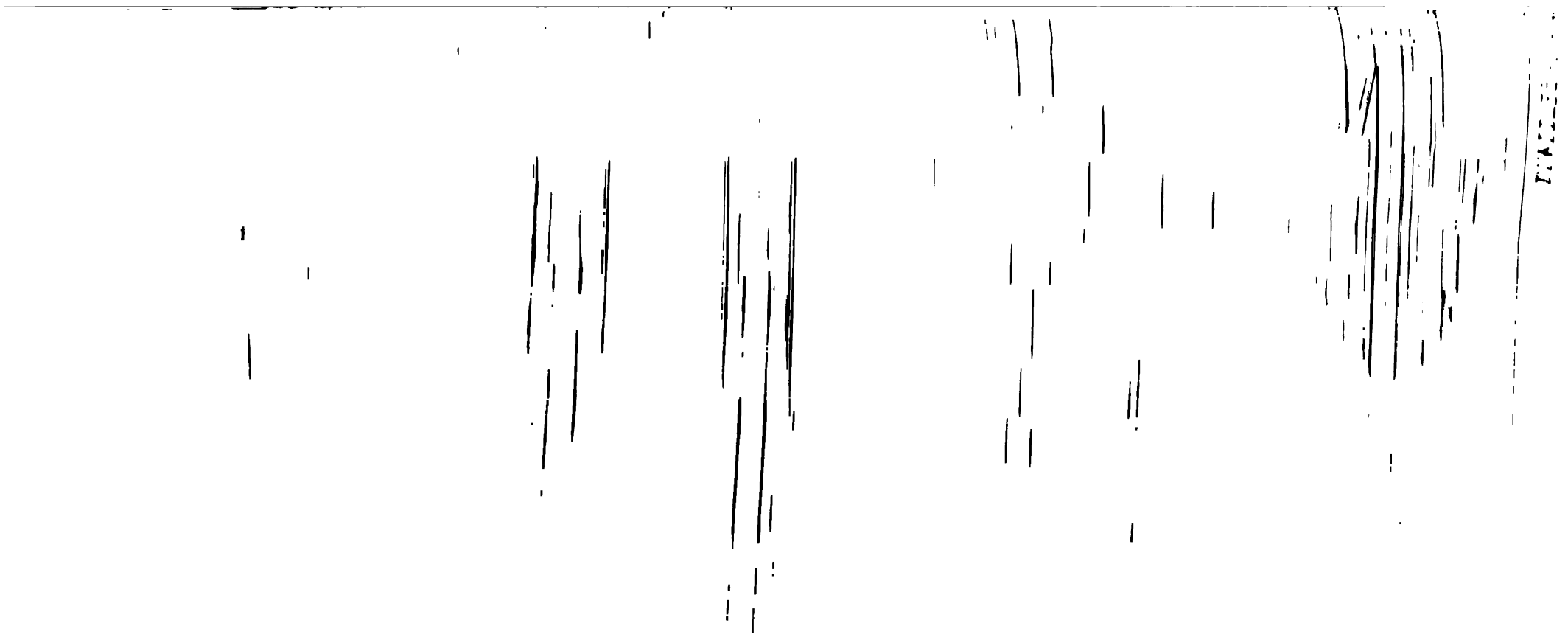
ges Augustins, Paris.

Auto.-Imp. A. Broise & Courtier, 43, rue de Dunkerque, Paris.



Emboutisseur **Bond**.

Fig. 14 à 17.

Fig. 14.

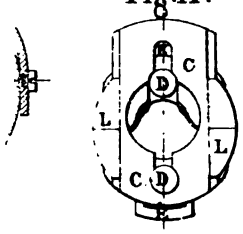


Fig. 16.

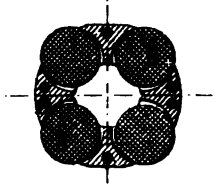


Fig. 15.

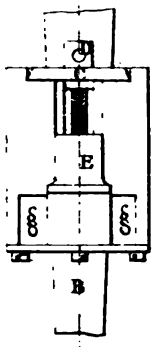
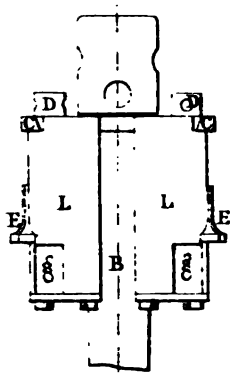


Fig. 17.



Thomson. Fig. 18 à 21.

Fig. 19.

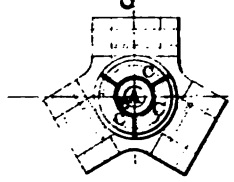
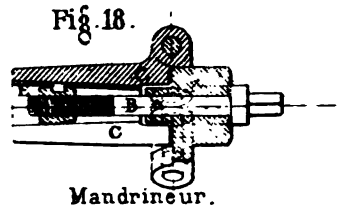


Fig. 18.



Mandrineur.

Fig. 21.

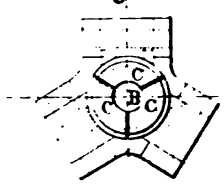
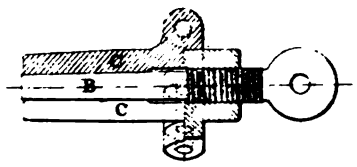


Fig. 20.



Mandrineur. **Tully**. Fig. 22 et 23.

Fig. 22.

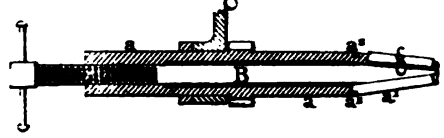
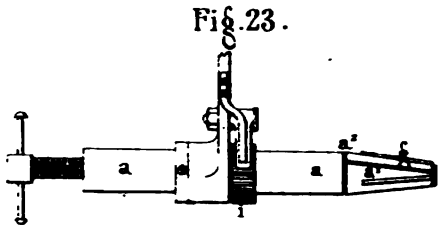


Fig. 23.



Coupe-tubes **Boyer et de Lavalette**

Fig. 24.

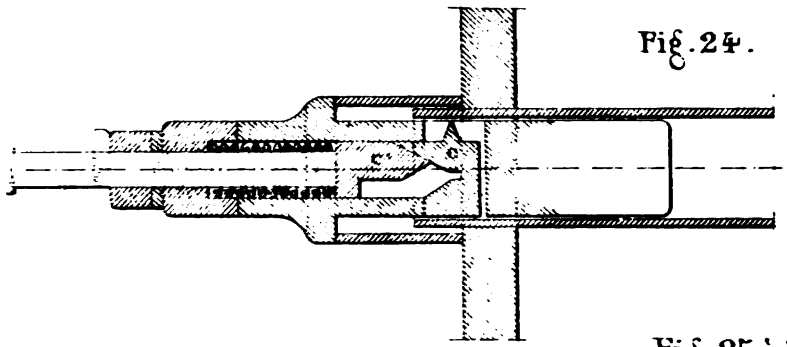


Fig. 27.

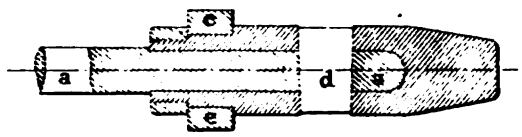
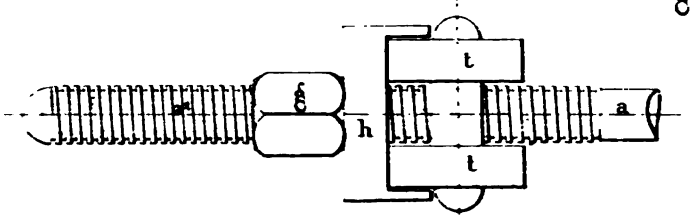


Fig. 25 à 27. Extracteur **Dixon**.



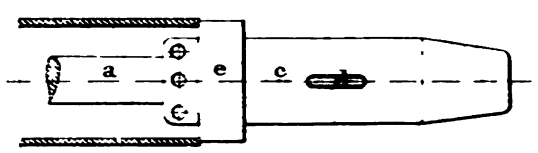


Fig. 26.

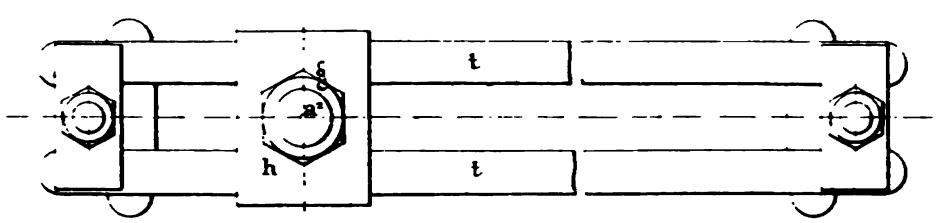


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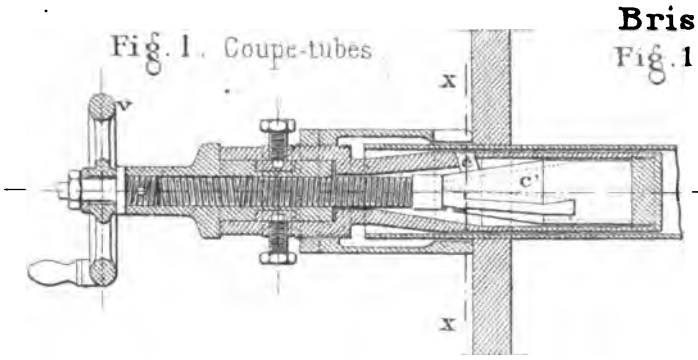
Fig. 1. Coupe-tubes



Brisse

Fig. 1 à 5.

Fig. 2. Coupe xx

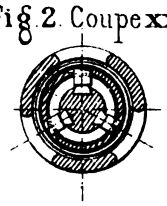


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Fig. 6,

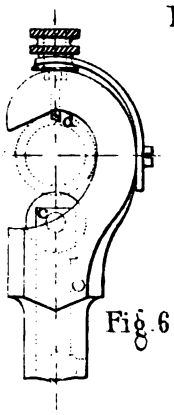

Fig. 6.

Fig. 3. Riveuse.

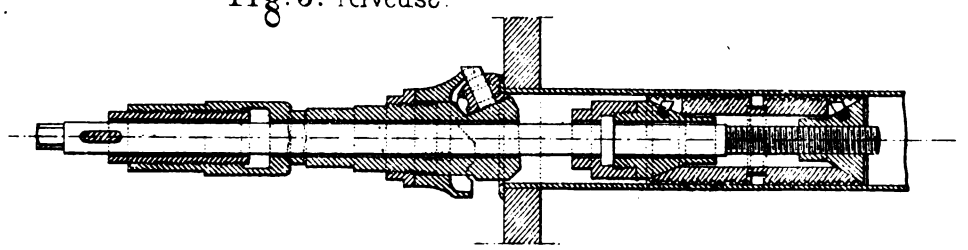

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Fig. 4. Fraiseuse.

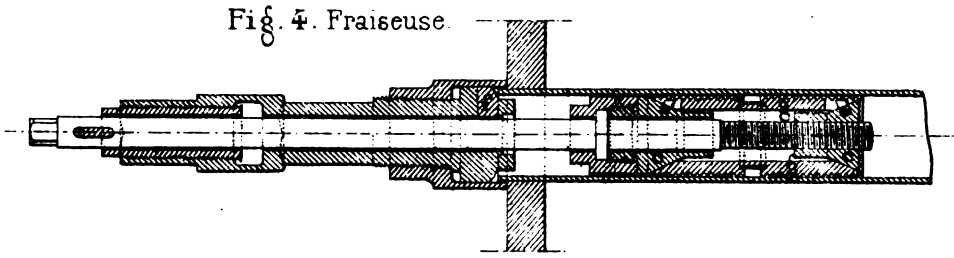
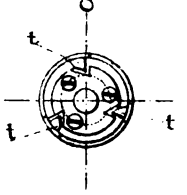


Fig. 5.



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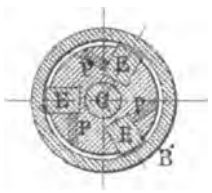

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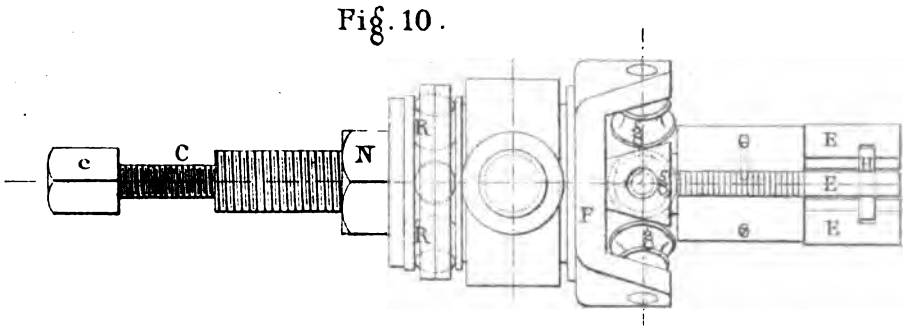
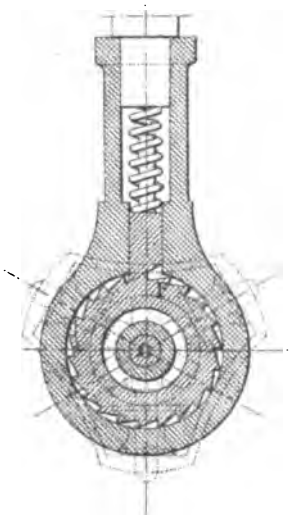


Fig. 13.

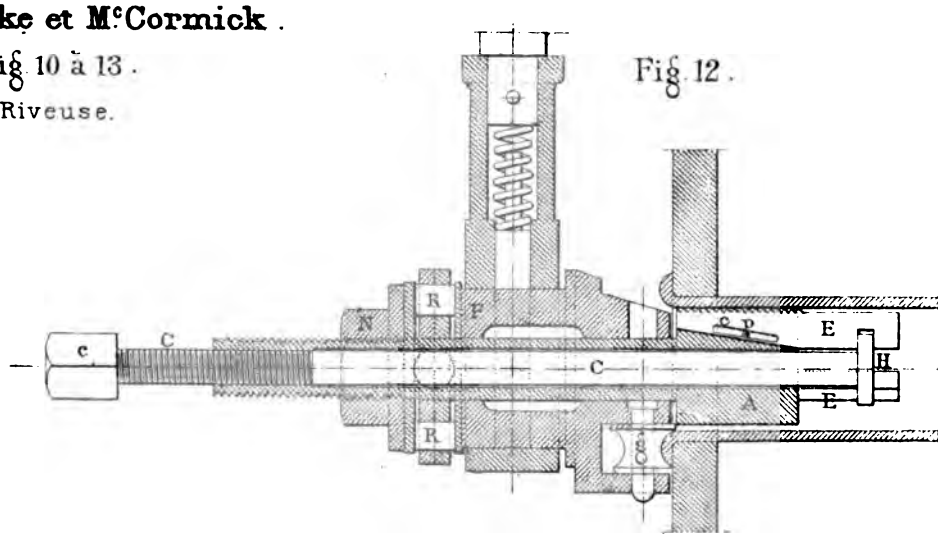


Fricacke et Mc Cormick.

Fig. 10 à 13.

Riveuse.

Fig. 12.



…y

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…7.

…ubes.

Fig. 8.

Emboutisseur **Bond**.

Fig. 14 à 17.

Fig. 14.

Fig. 16.

Fig. 15.

Fig. 17.

Thomson. Fig. 18 à 21.

Fig. 19.

Fig. 18.

Mandrineur.

Fig. 21.

Fig. 20.

…**Cowley**

…).

…-tubes.

Mandrineur, **Tully**. Fig. 22 et 23.

Fig. 22.

Fig. 23.

Coupe-tubes **Boyer et de Lavalette**

Fig. 24.

Fig. 27.

Fig. 25 à 27. Extracteur **Dixon**.

Fig. 26.

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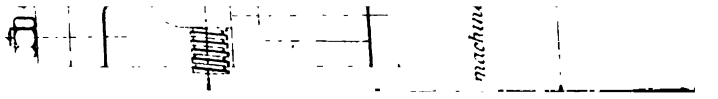
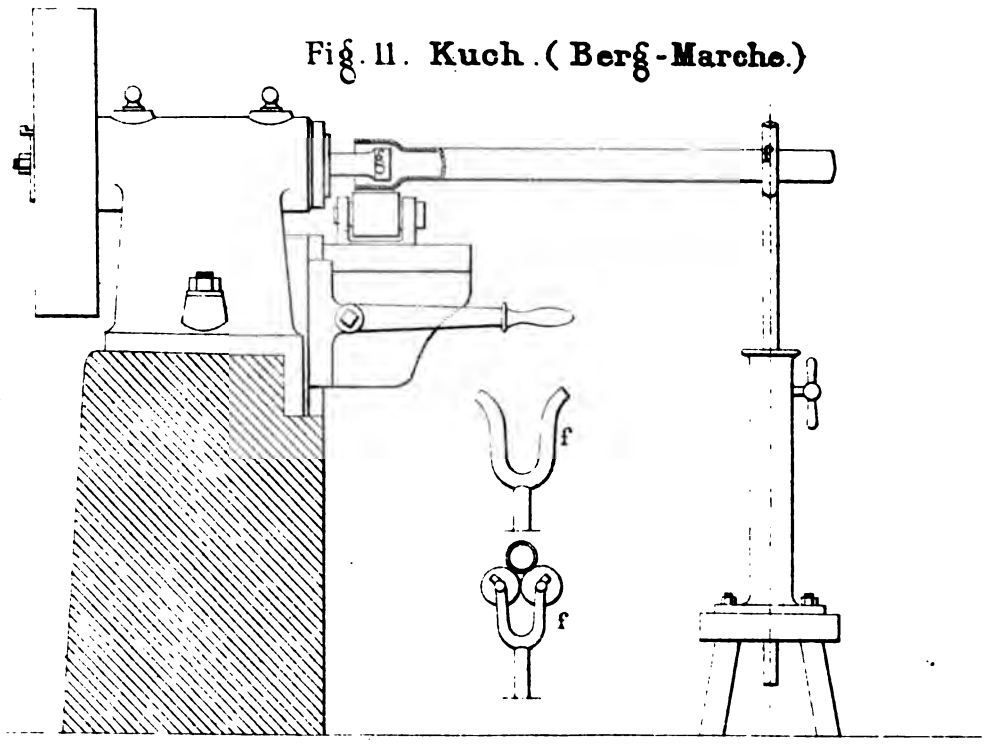


Fig. 11. **Kuch. (Berg-Marche.)**



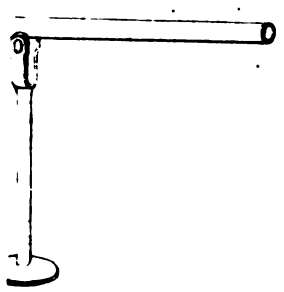
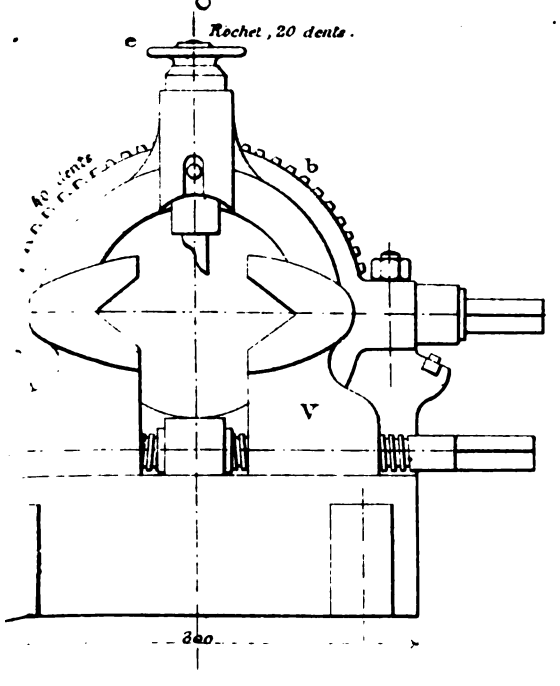


Fig. 14.

ıbes

Fig. 13.



$\frac{1 \times 16}{20 \times 40} = \frac{16}{800}$

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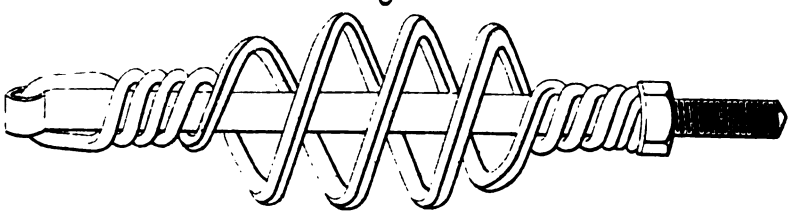

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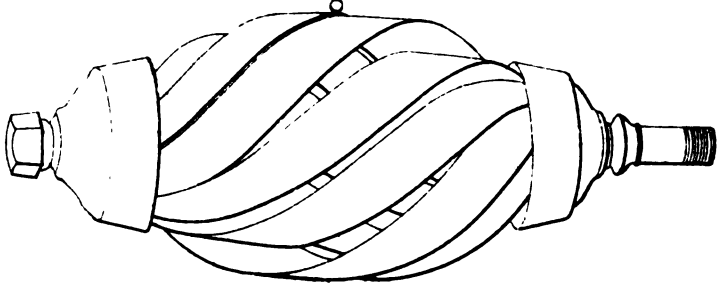

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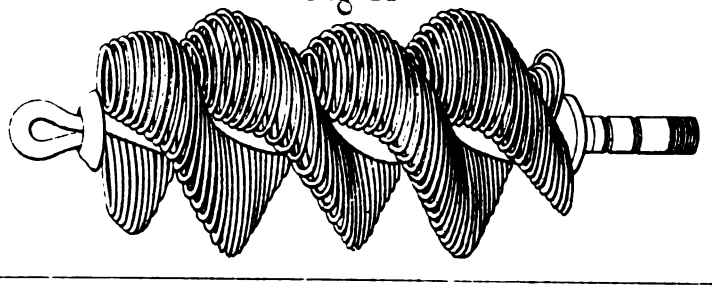

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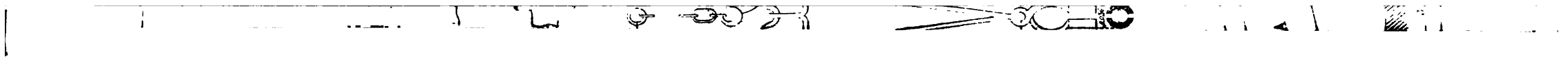

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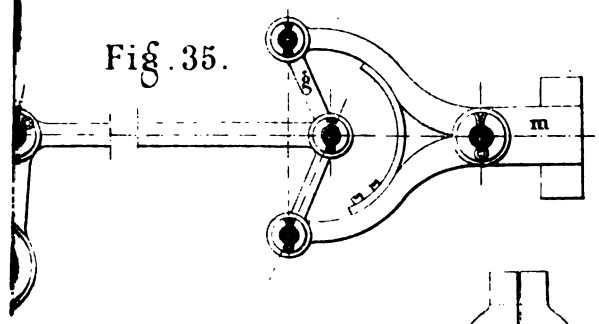

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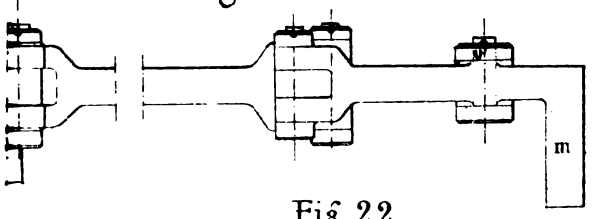

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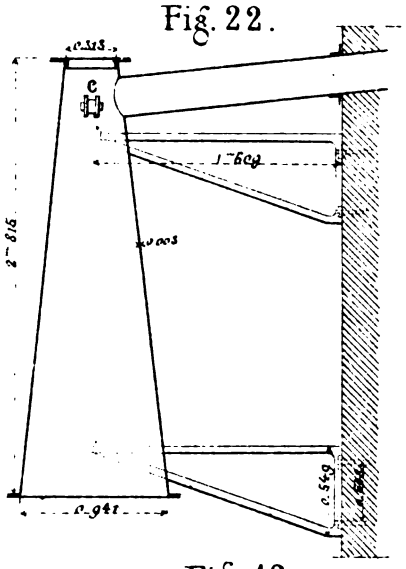

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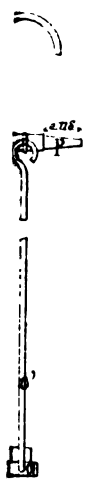

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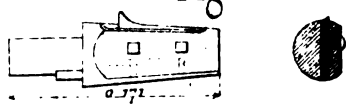

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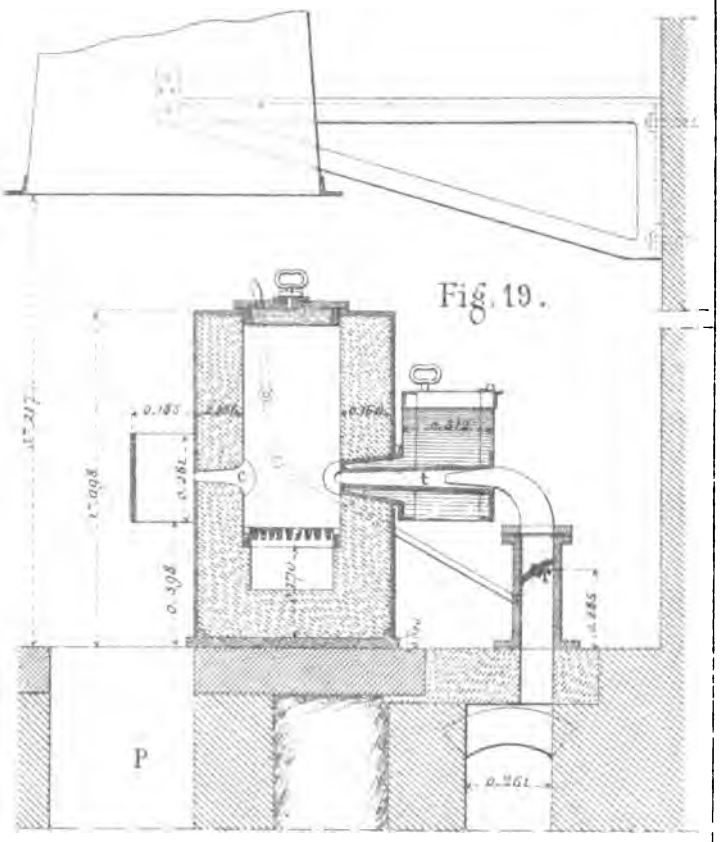

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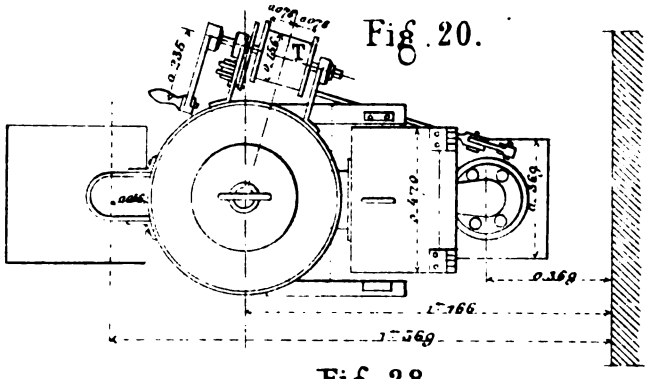

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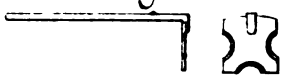

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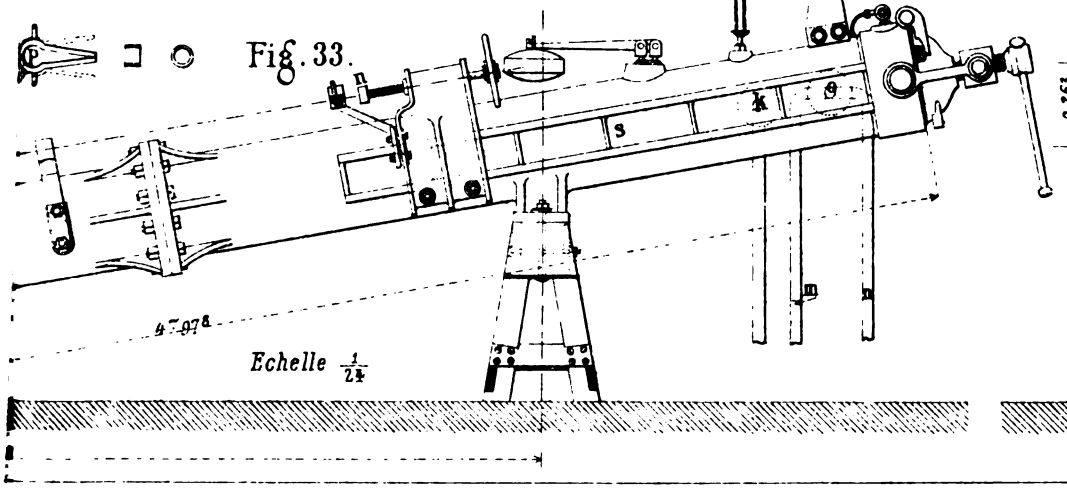

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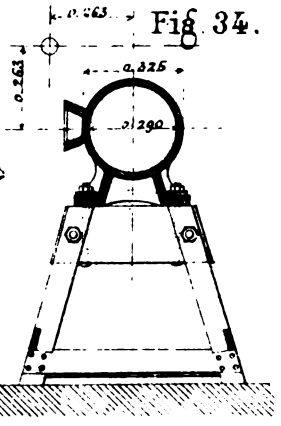

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Fig. 1. Elévation longitudinale.

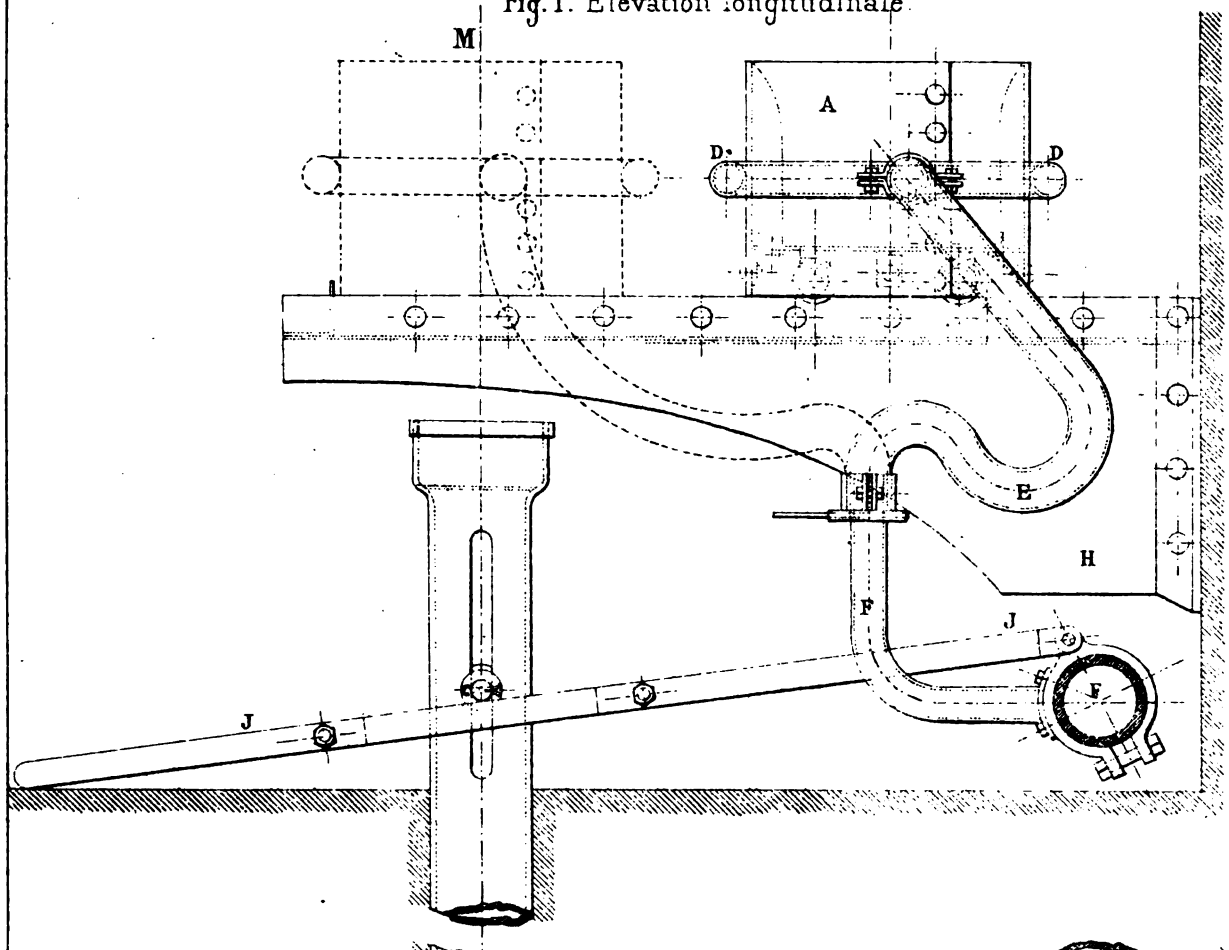

Fig. 4. Plan.

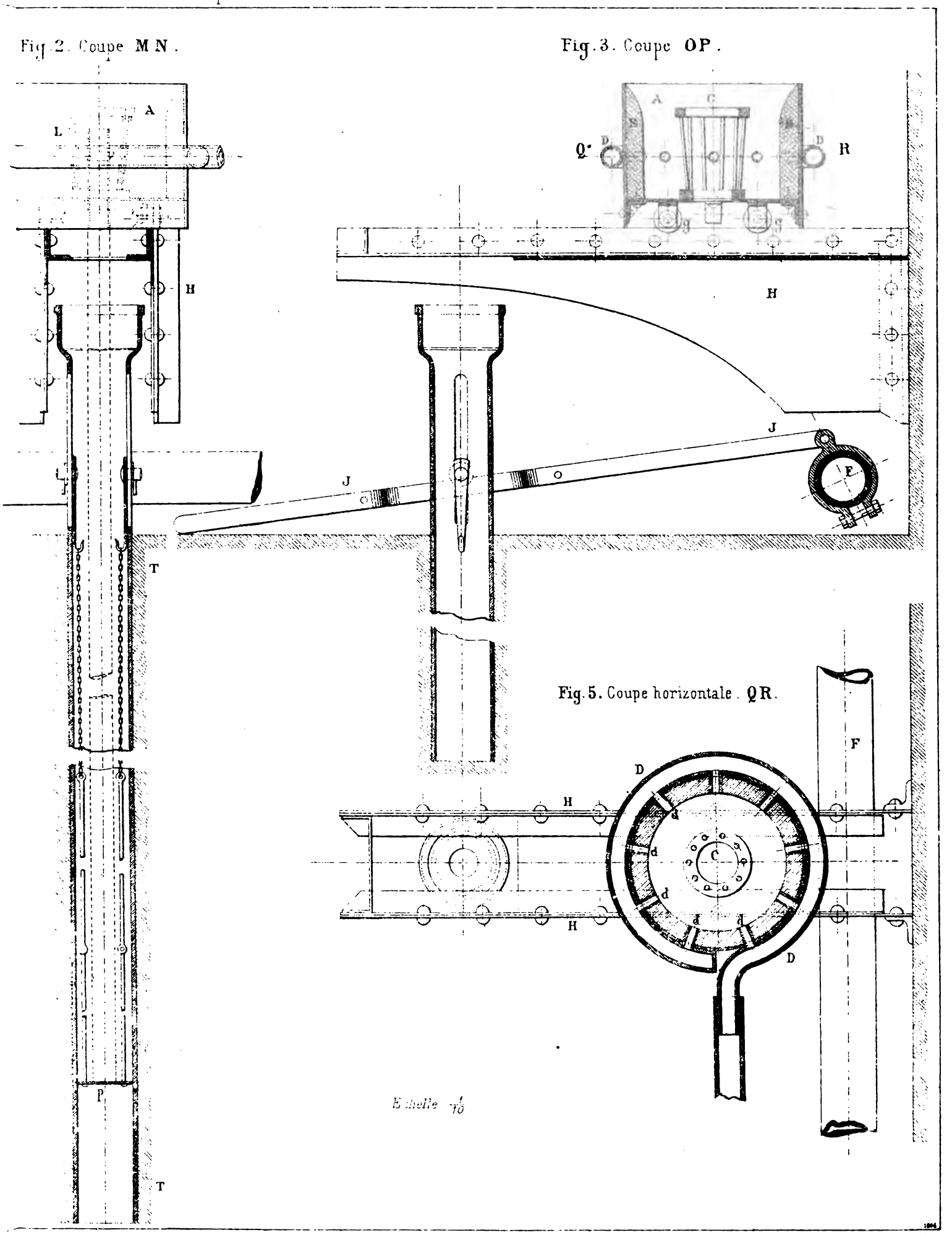

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Fig. 2
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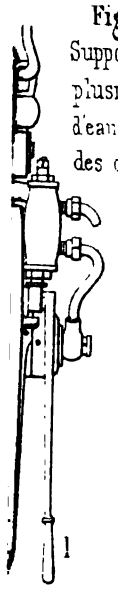
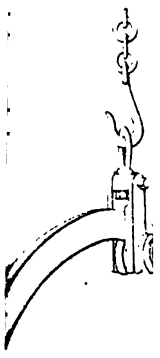


Fig. 2



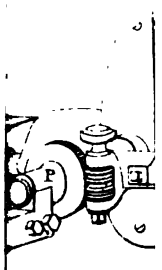


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Fig. 23. Fig. 24

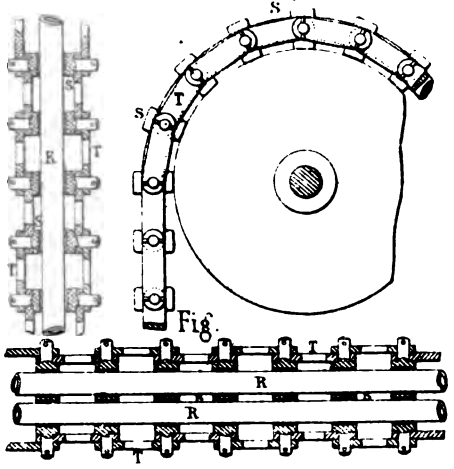

Fig.

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Fig. 25
Grue hydraulique à potence **Tweddell**.

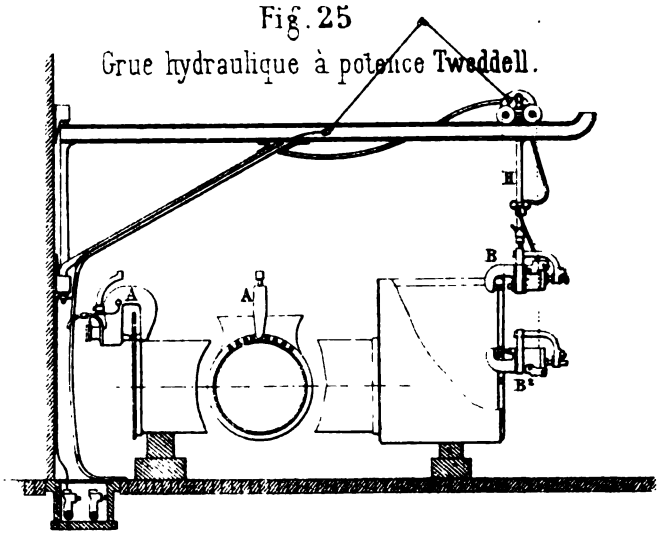
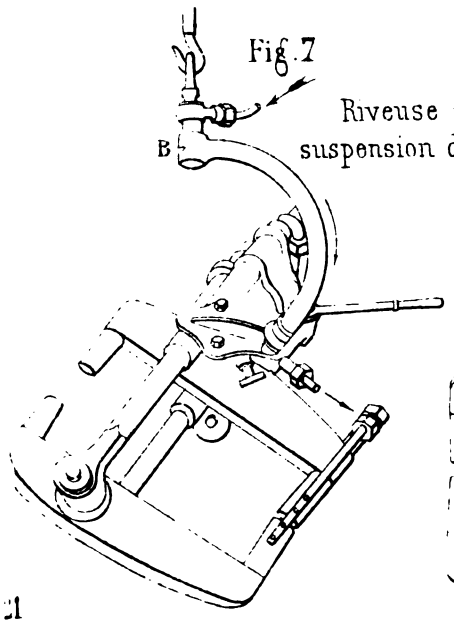


Fig. 7



Riveuse à
suspension directe

Fig. 8.

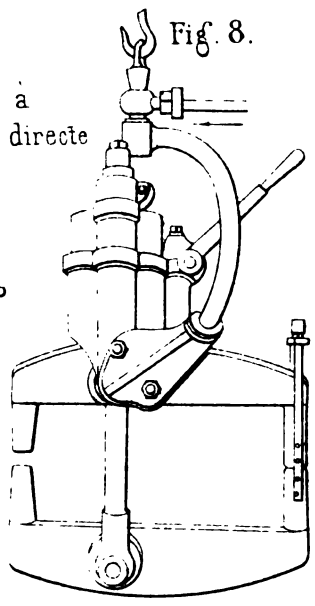
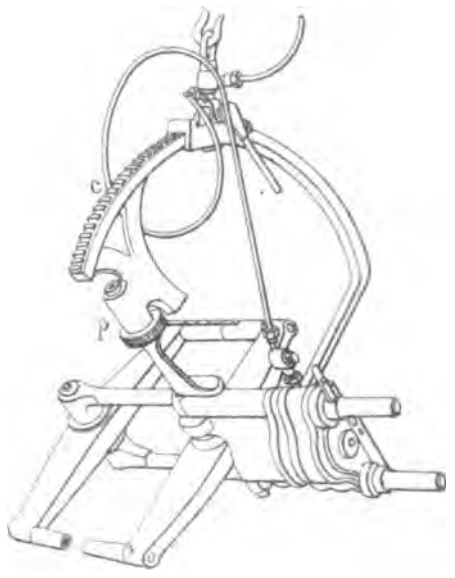


Fig. 9. Riveuse à crémaillère.



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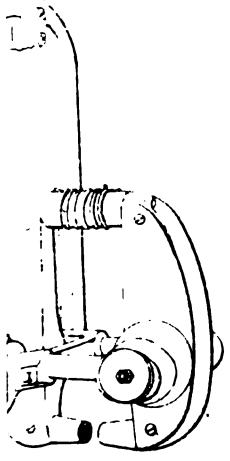

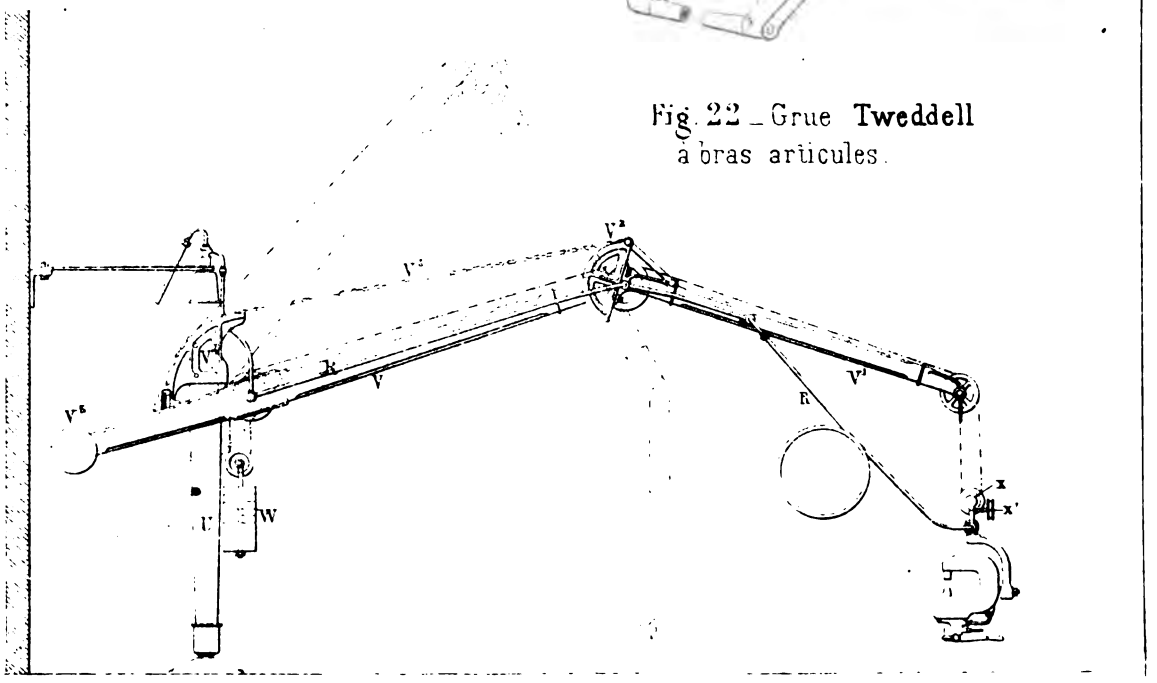

Fig. 22 – Grue **Tweddell**
à bras articulés.

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Allen.

Fig.6

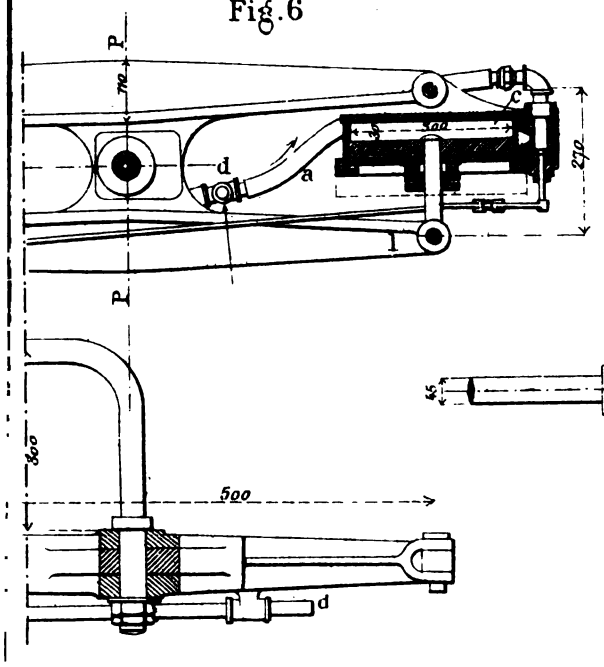
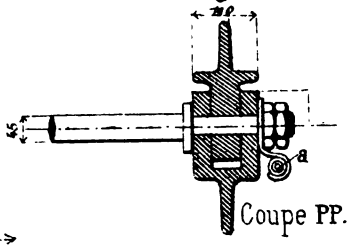


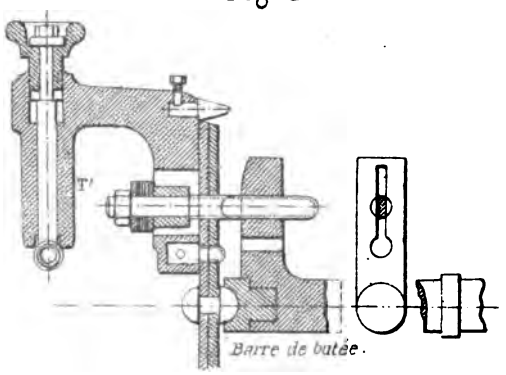
Fig.7



Coupe PP.

Fig. 5.6.7 et 8
Riveuse à air comprimé d'**Allen**

Fig.8



Tweddell Riveuse directe

Fig.14

Fig.15

Poinçonneuse
saille
dell

Fig.13

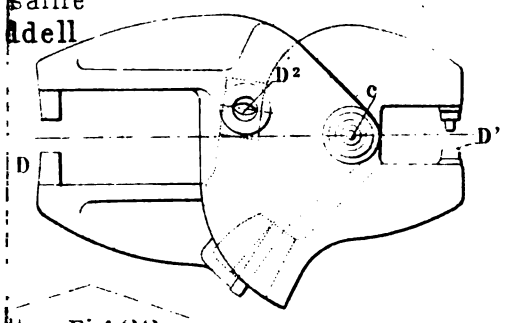


Fig.22

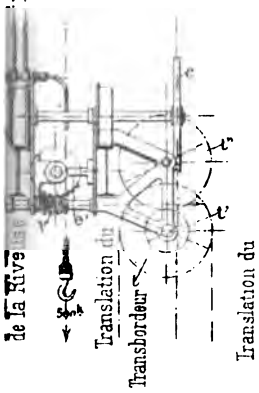


Fig.23

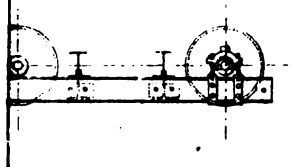


Fig.20 à 24
Transbordeur
pour
Riveuses portatives
de l'atelier des
Chemins de Fer
d'Orléans.

Fig.24

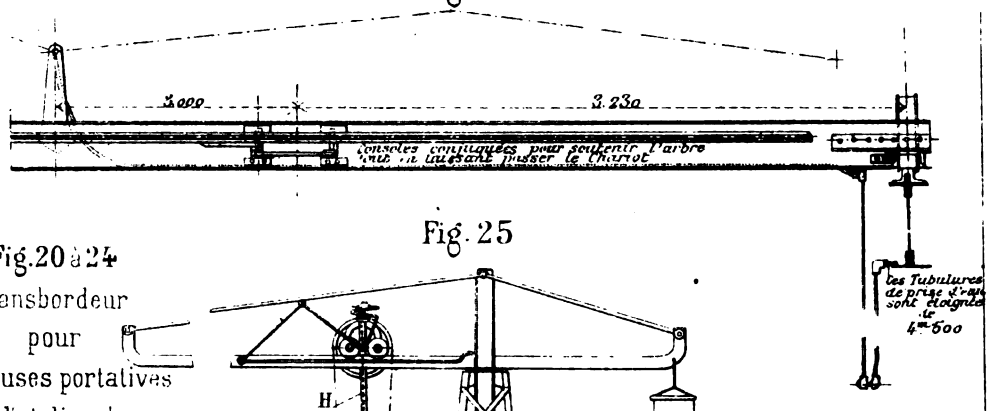
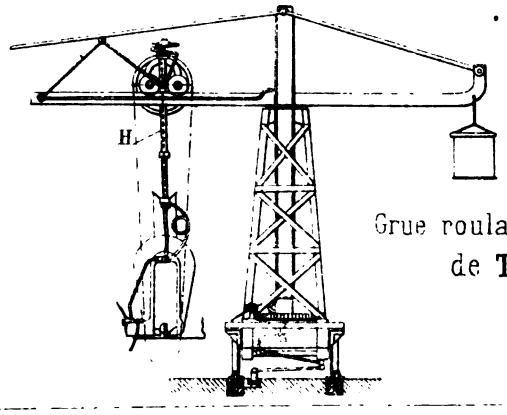


Fig.25



Grue roulante hydraulique
de **Tweddell**

4036
Auto.-Imp. A. Broise & Courtier 43, rue de Dunkerque, Paris.

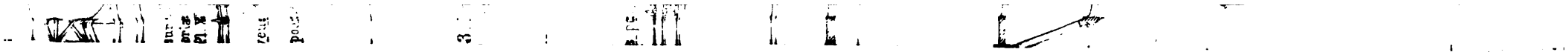


Fig. 11. Coupe transversale sur AB. CD. GH.

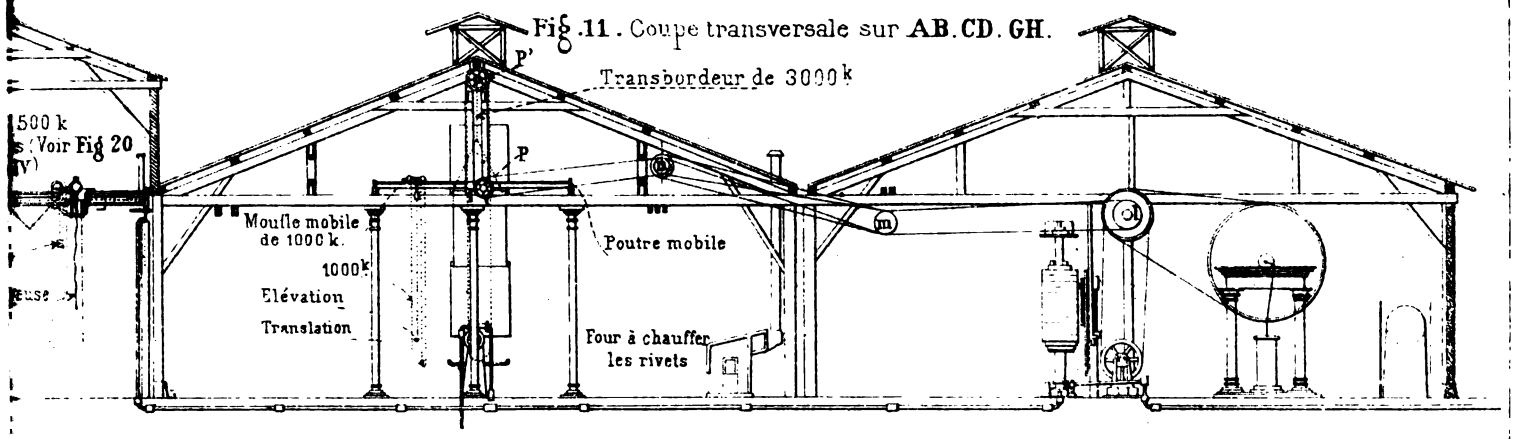
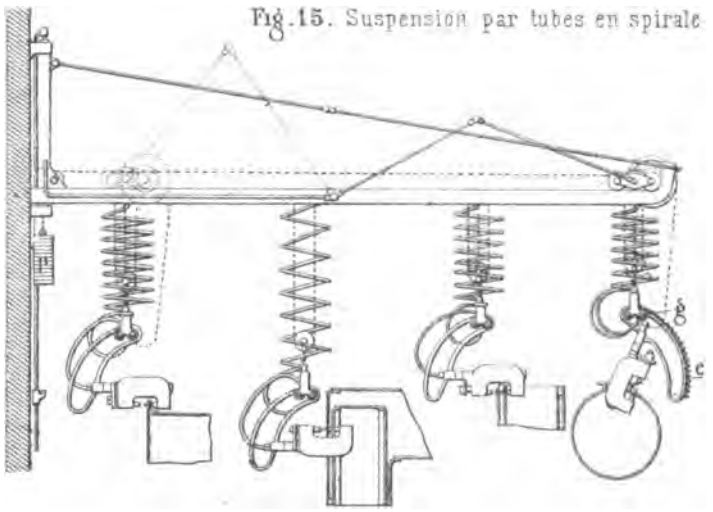
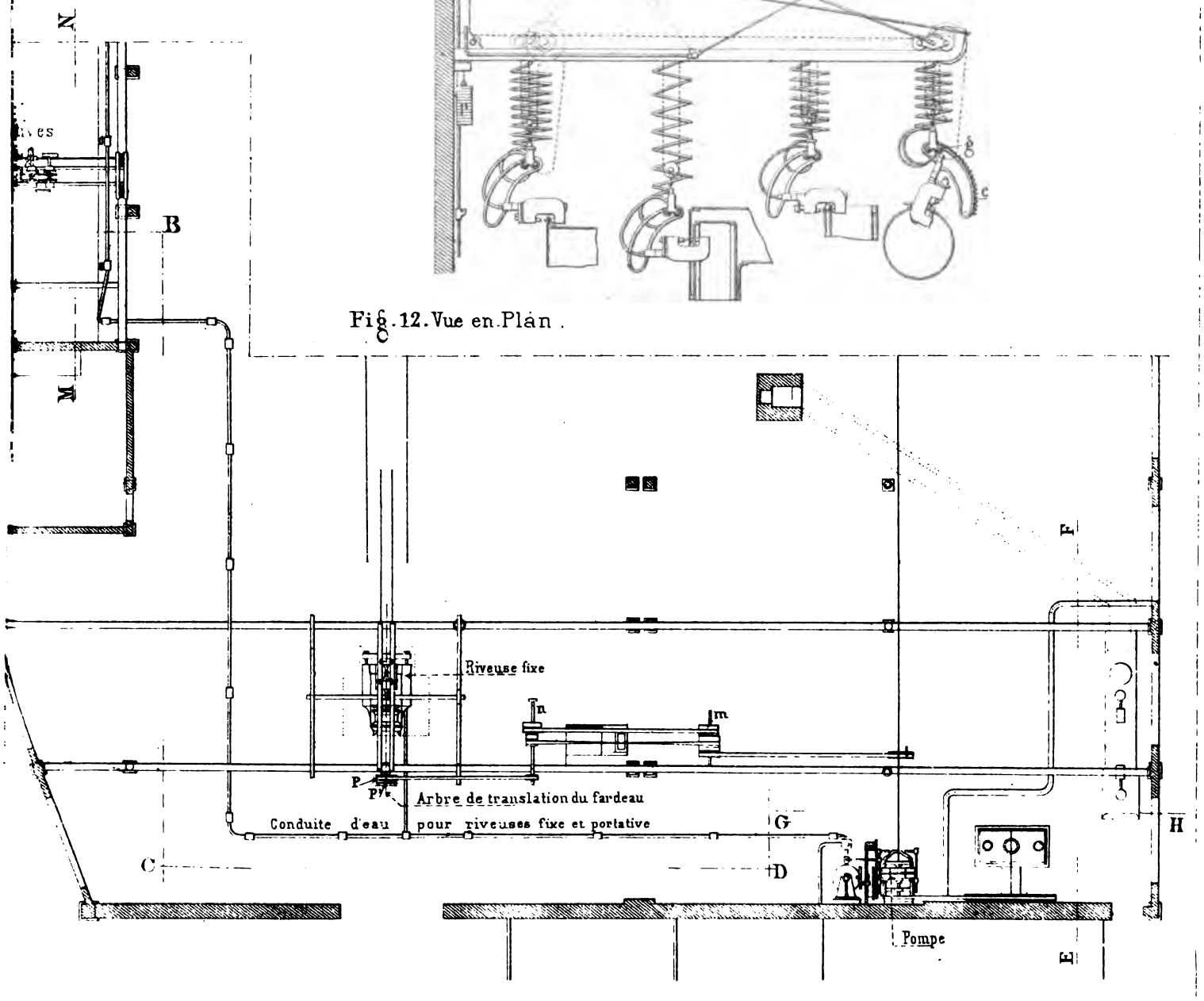


Fig. 15. Suspension par tubes en spirale



emble de l'intallation
elle $\frac{1}{200}$

Fig. 12. Vue en Plan.



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4088.
Paris.

Tweddell.

Fig. 6 Installation type d'un accumulateur et d'une riveuse fixe

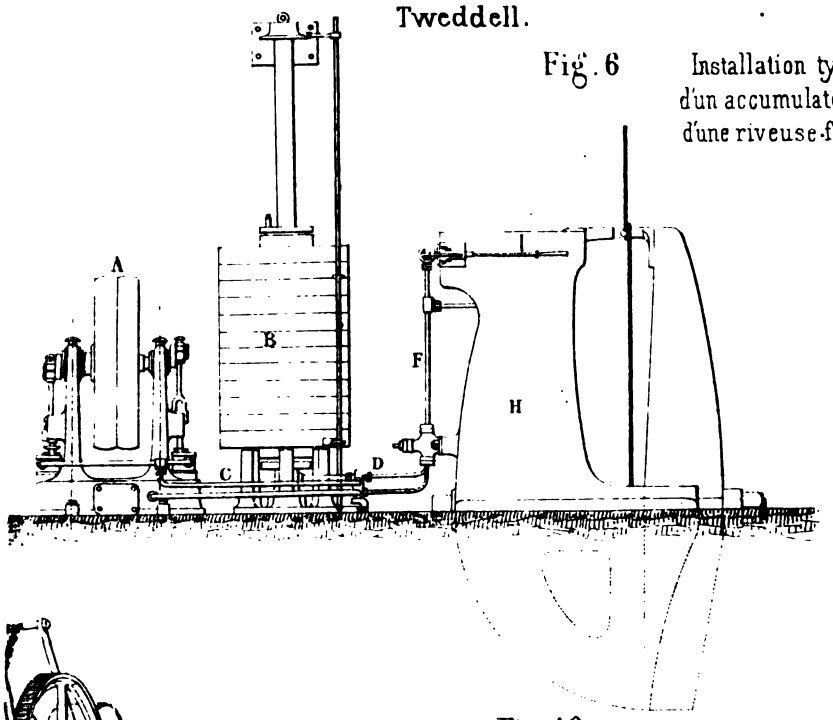
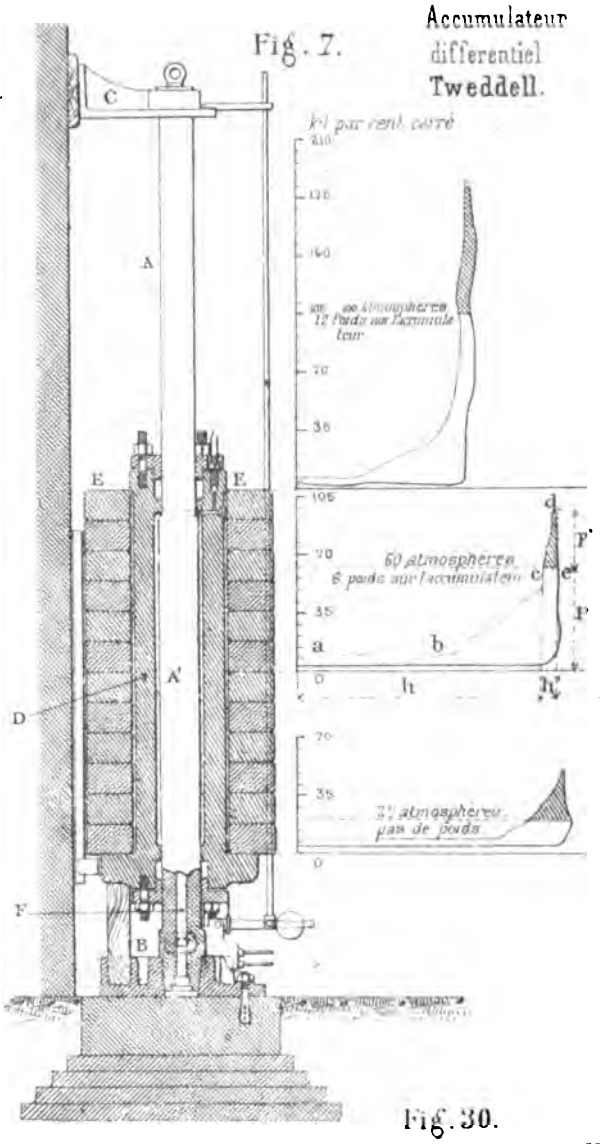


Fig. 7. Accumulateur différentiel **Tweddell.**



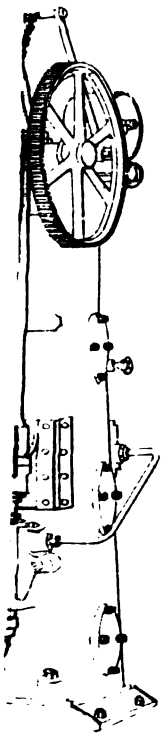


Fig. 16.
Tweddell. Riveuse murale

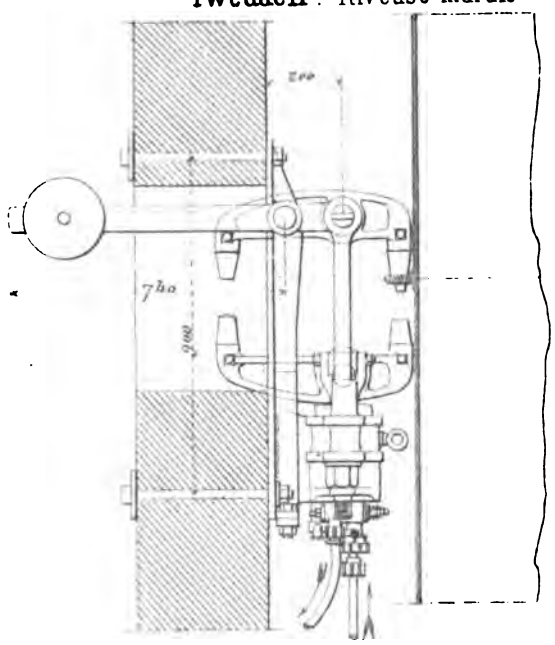
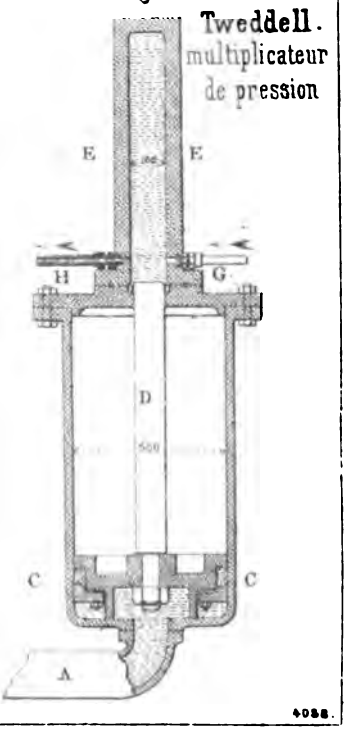
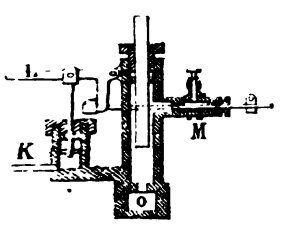


Fig. 30. **Tweddell.** multiplicateur de pression



Kinney (Accumulateur à air)
Fig. 26



Shewell.
Fig. 27.

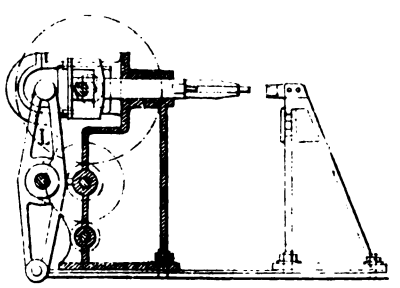


Fig. 28. **Pollock.**

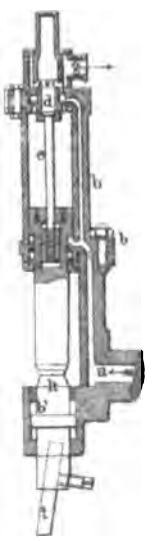
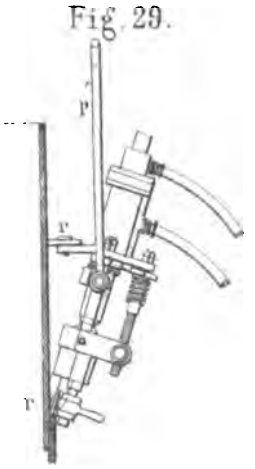


Fig. 29.



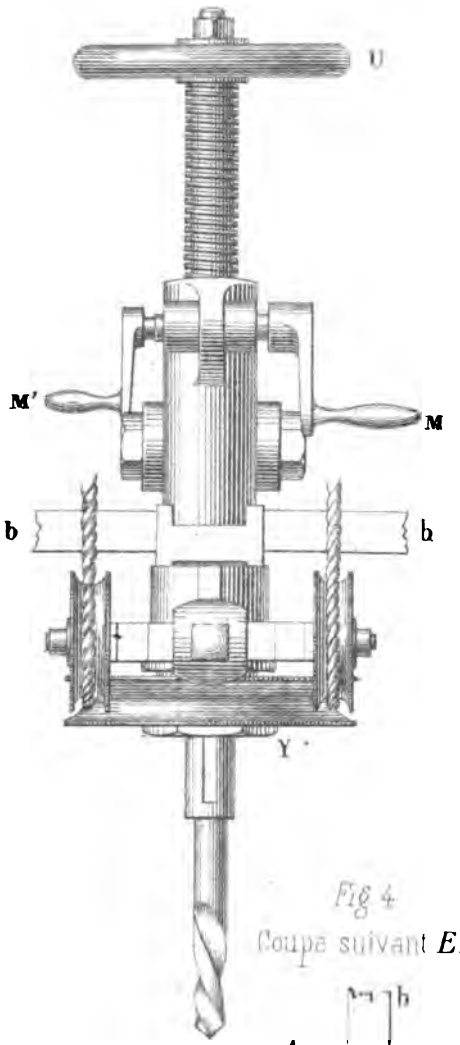
Marteau à air comprimé

Auto.-Imp. A. Broise & Courtier, 43, rue de Dunkerque, Paris.

PERÇAGE DES CH
aux ateliers du Chemi

Machine à percer

Fig 1
Vue de Profil.



Echelle 1/5e

Fig 2.
Coupe suivant A

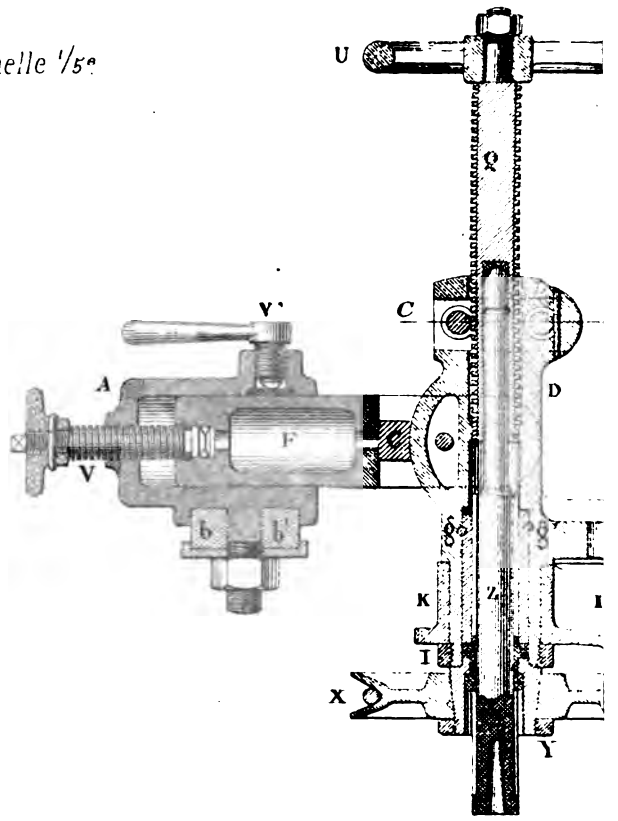


Fig 4
Coupe suivant *EF*.

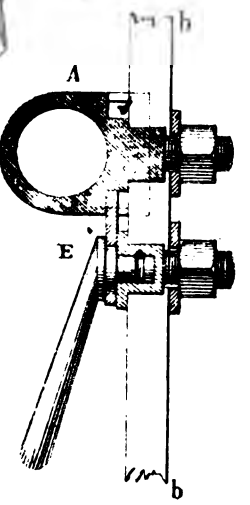
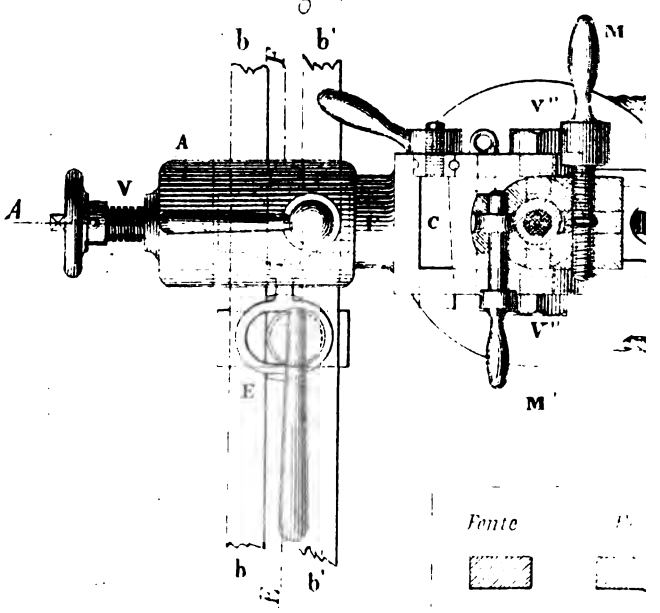
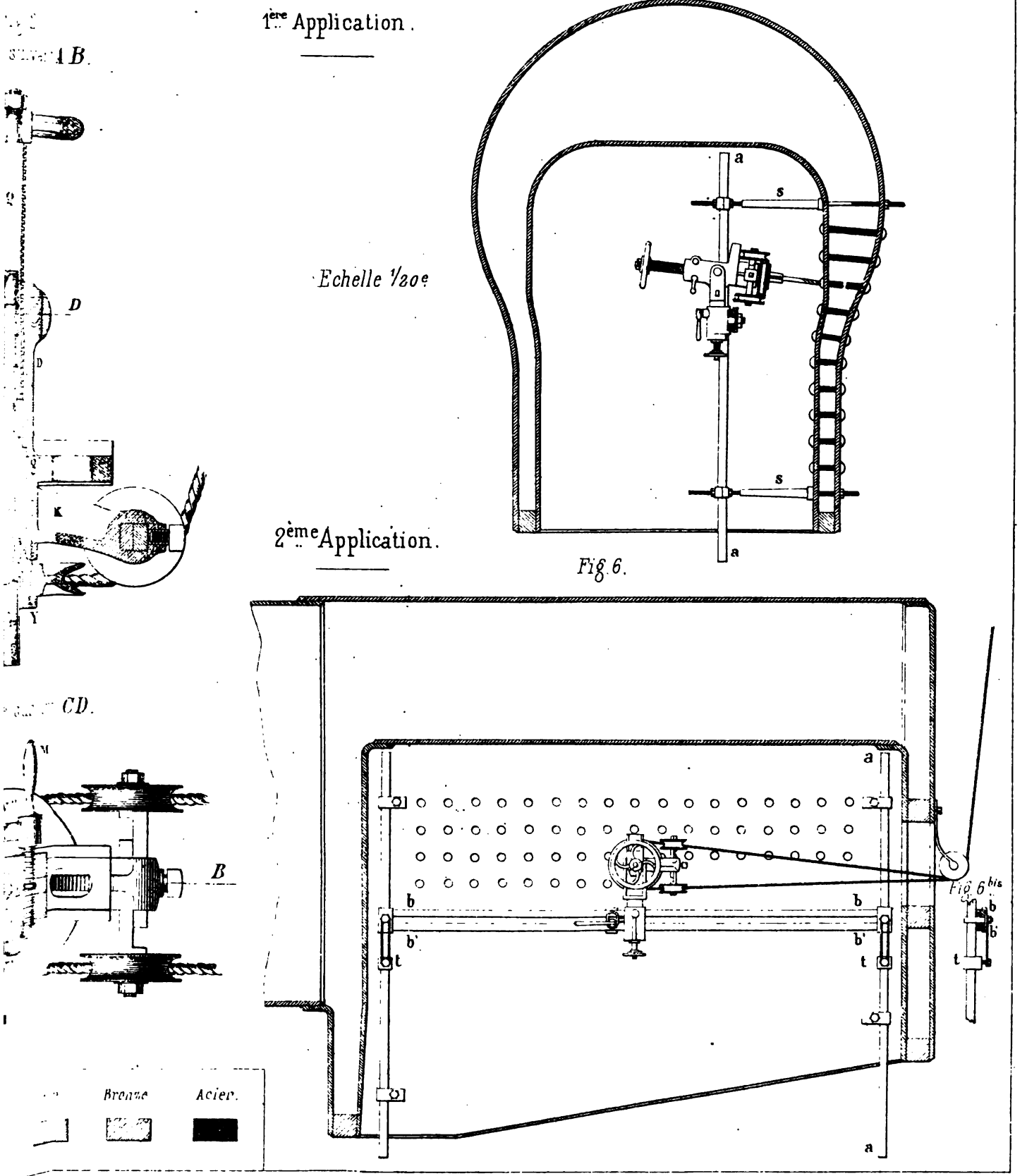


Fig 3.
Coupe suivant



Fonte

percer portative à corde.



ai des Augustins _ Paris.
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Machine à tarauder

Fig. 7
Coupe suivant ***A B***.

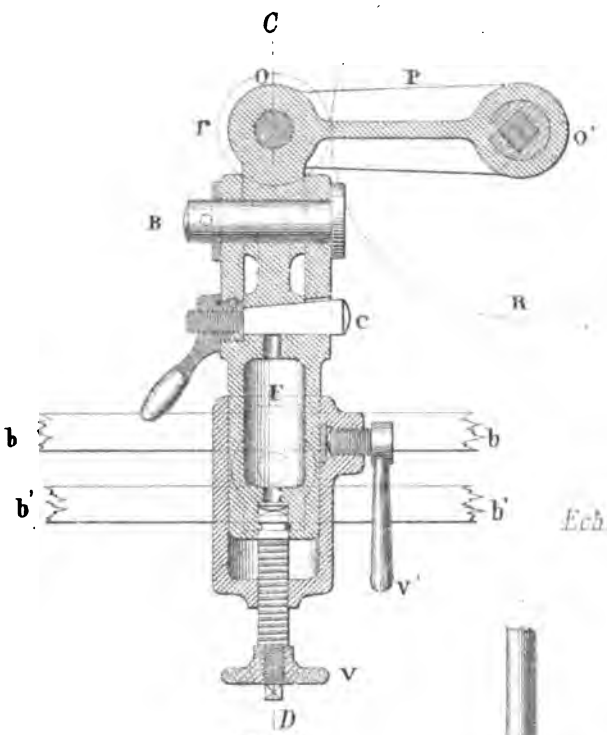


Fig. 9
Vue en plan.

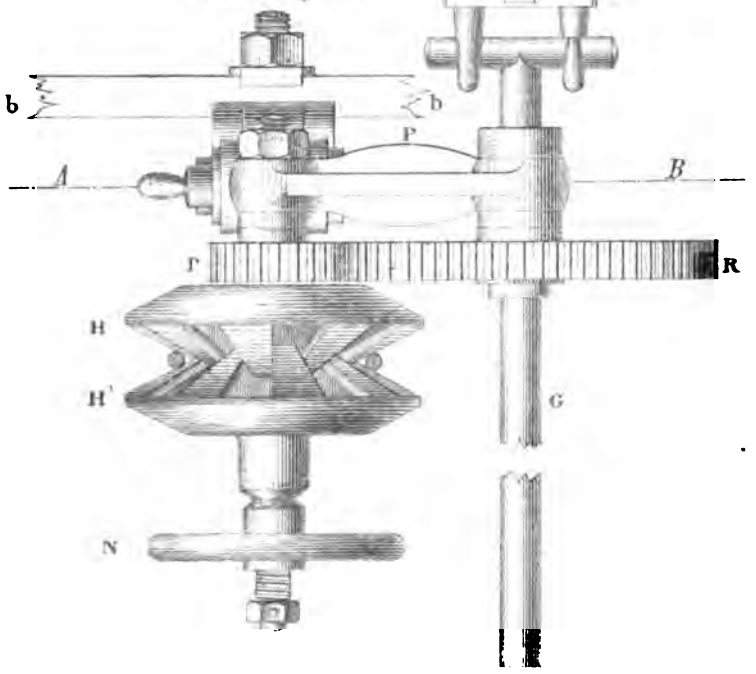
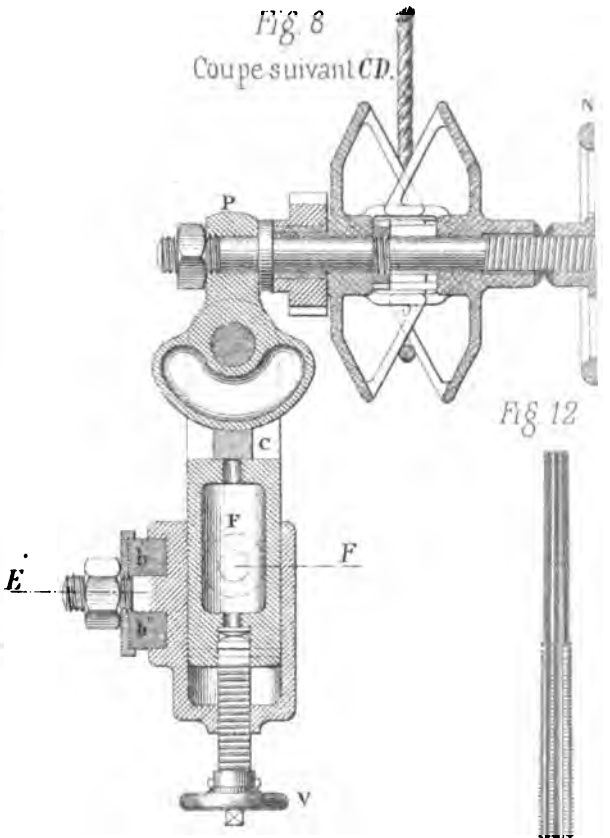


Fig. 8
Coupe suivant ***CD***.



Echelle 1/5e.

Fig. 12

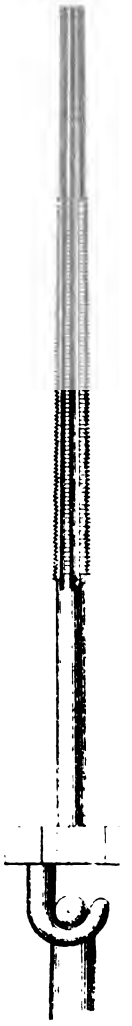


Fig. 11.
Vue en plan.

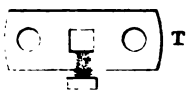
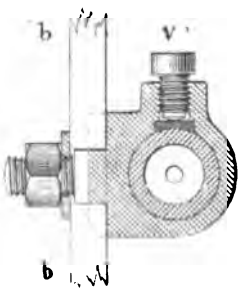


Fig. 10.
Coupe suivant ***EF***.



Fonte. *Fer.*

Chaudière portative à corde.

Fig. 13.

1ère Application.

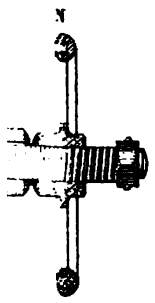
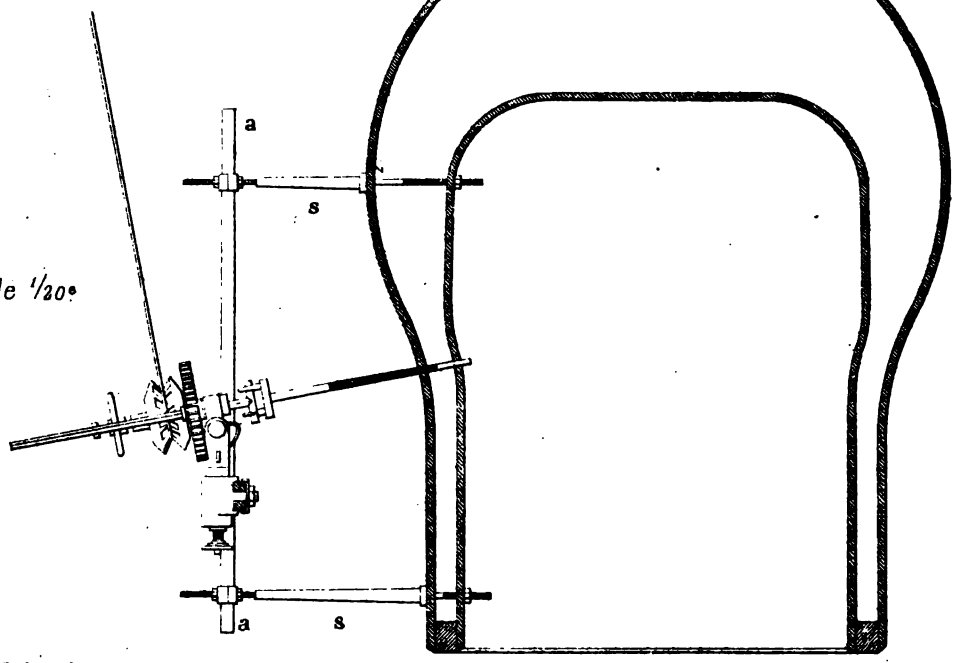


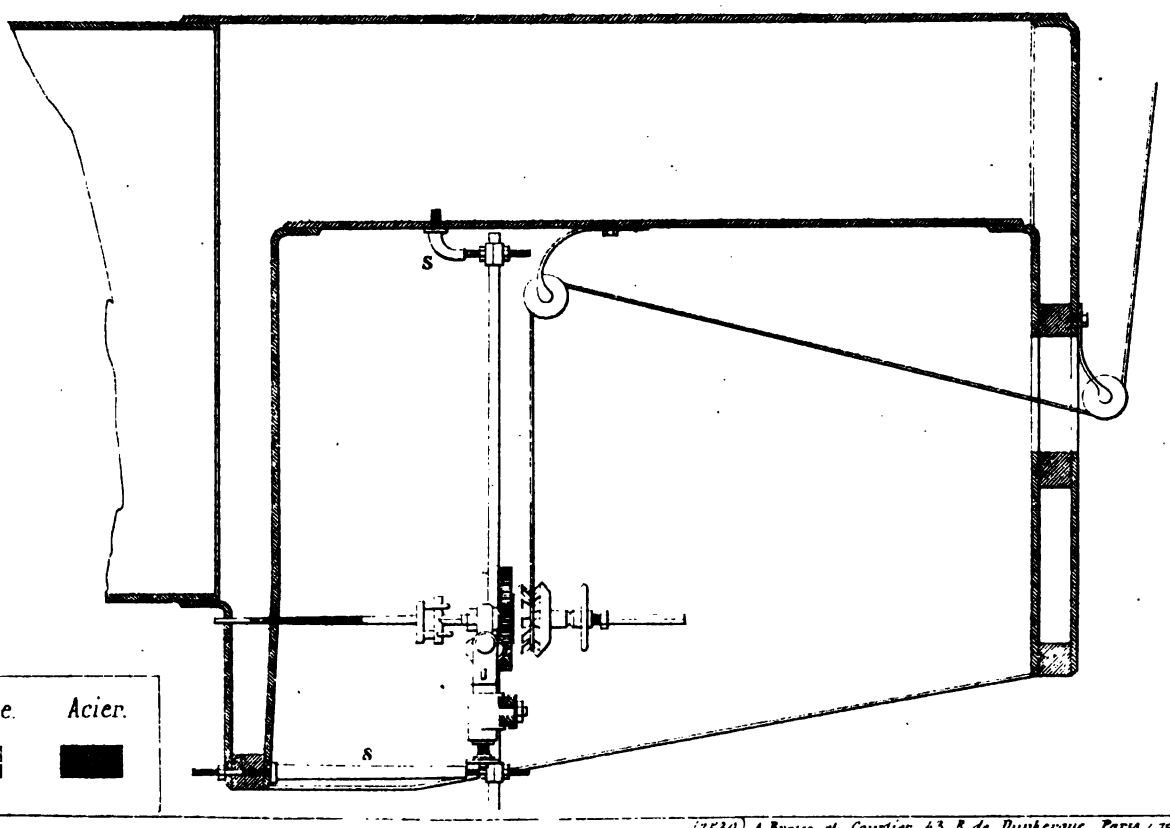
Fig 12



Echelle 1/20e

2ème Application.

Fig. 14



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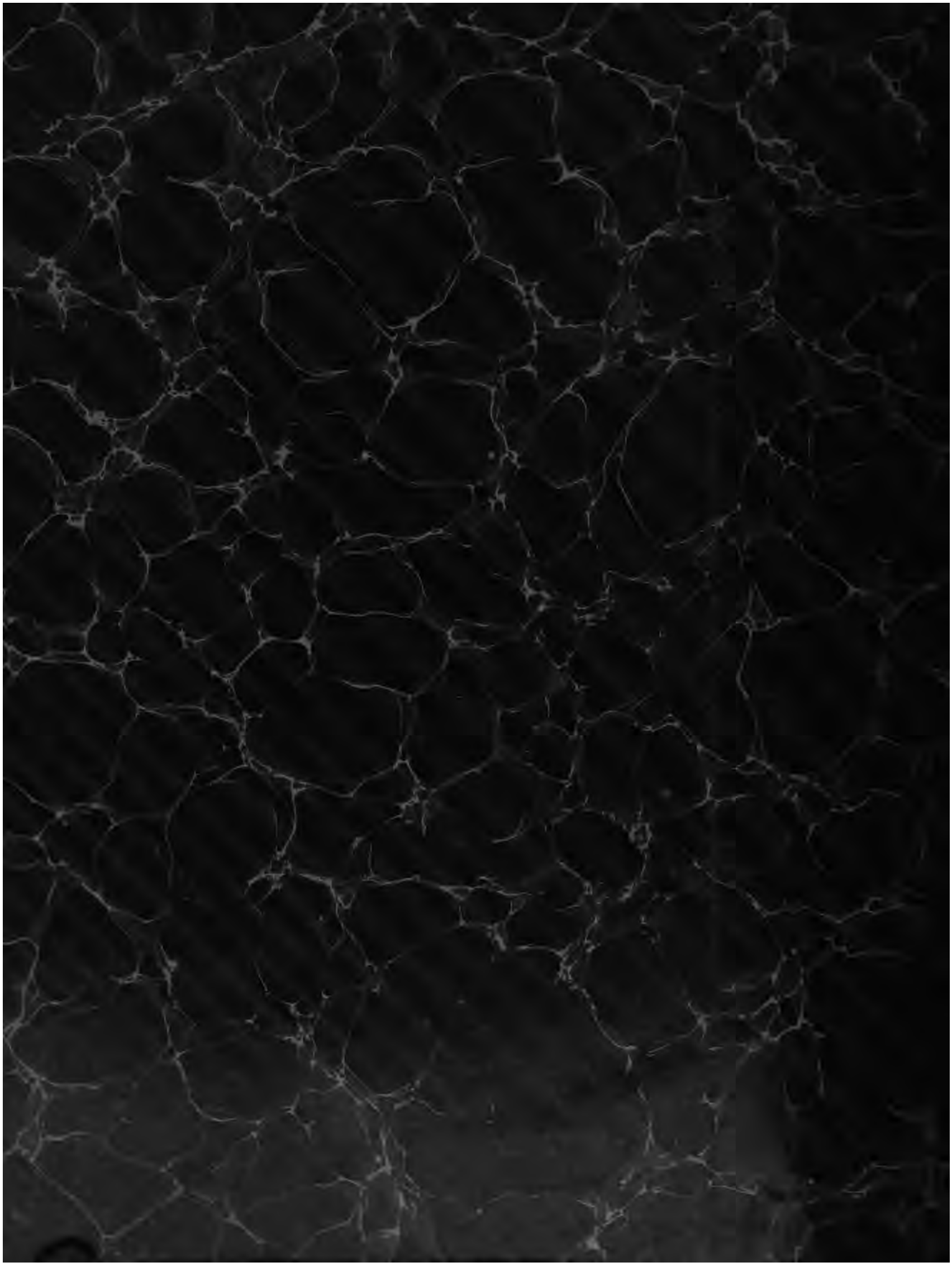
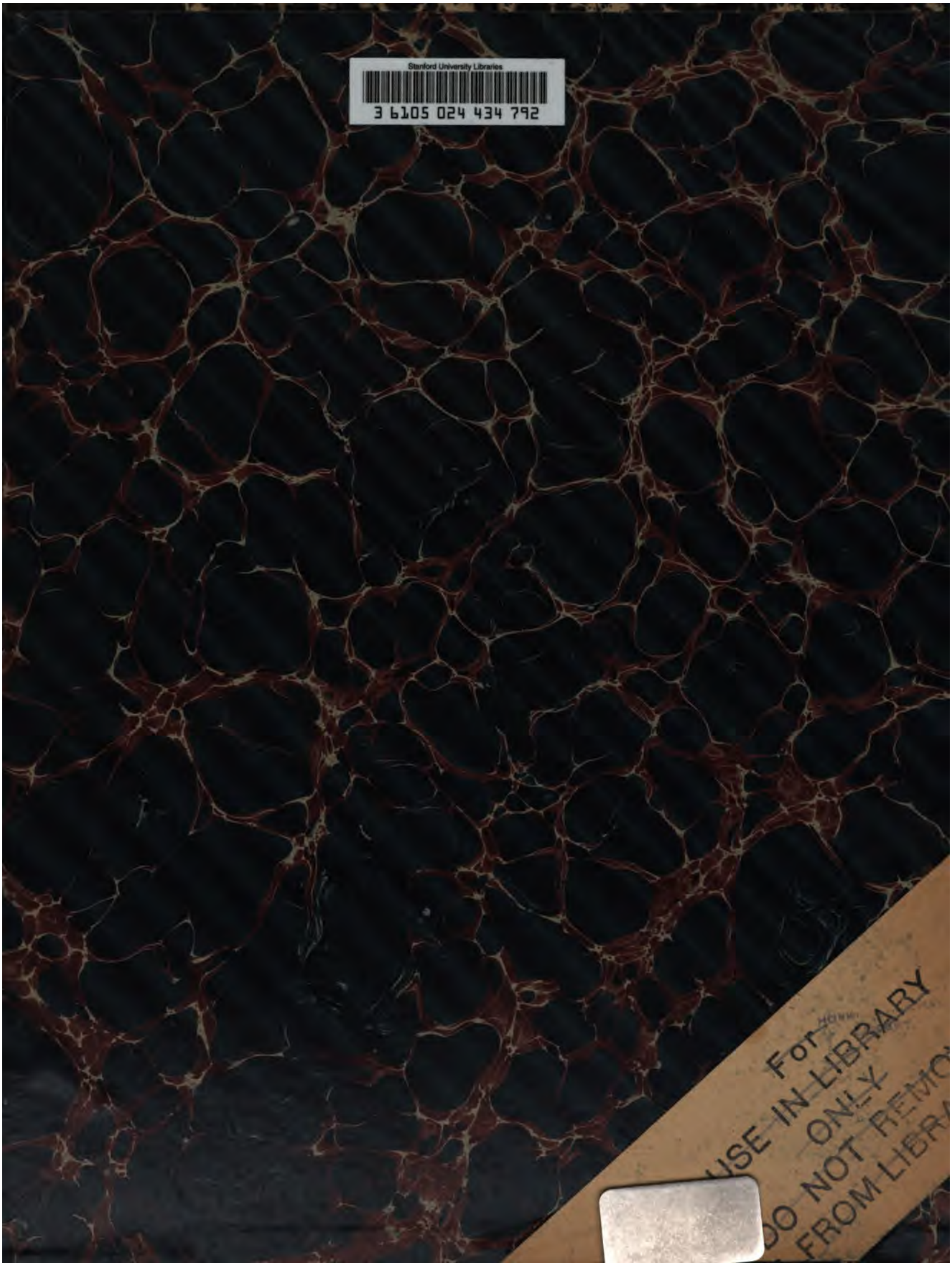
(3530) A Brause et Courtier 43 R de Dunkerque Paris (79)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